SIPOS AKTORIK

User manual

COM-SIPOS

PC parameterization program
for SIPOS 5 actuators

Software for:

- Commissioning
- Parameterization
- Operation
- Diagnosis
- Maintenance
- Visualization

Issue 01.15
Subject to change without notice!

Y070.024/GB

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1 General remarks

COM-SIPOS was originally designed as a software tool for commissioning and trouble-shooting the SIPOS 5 electric actuator range.
The software is subject to permanent development to implement the continuously enhanced features of the SIPOS 5 actuator range and to meet the increasing requirements of COM-SIPOS users.

Meanwhile, COM-SIPOS has evolved into a software for commissioning, parameterization, operation, diagnosis, maintenance, trouble-shooting, and visualization.

For the **PROFITRON/HiMod**, all visualized parameters in COM-SIPOS can also be set / viewed via the local push buttons and the LCD.
The **ECOTRON** has limited programming abilities both locally and via COM-SIPOS.

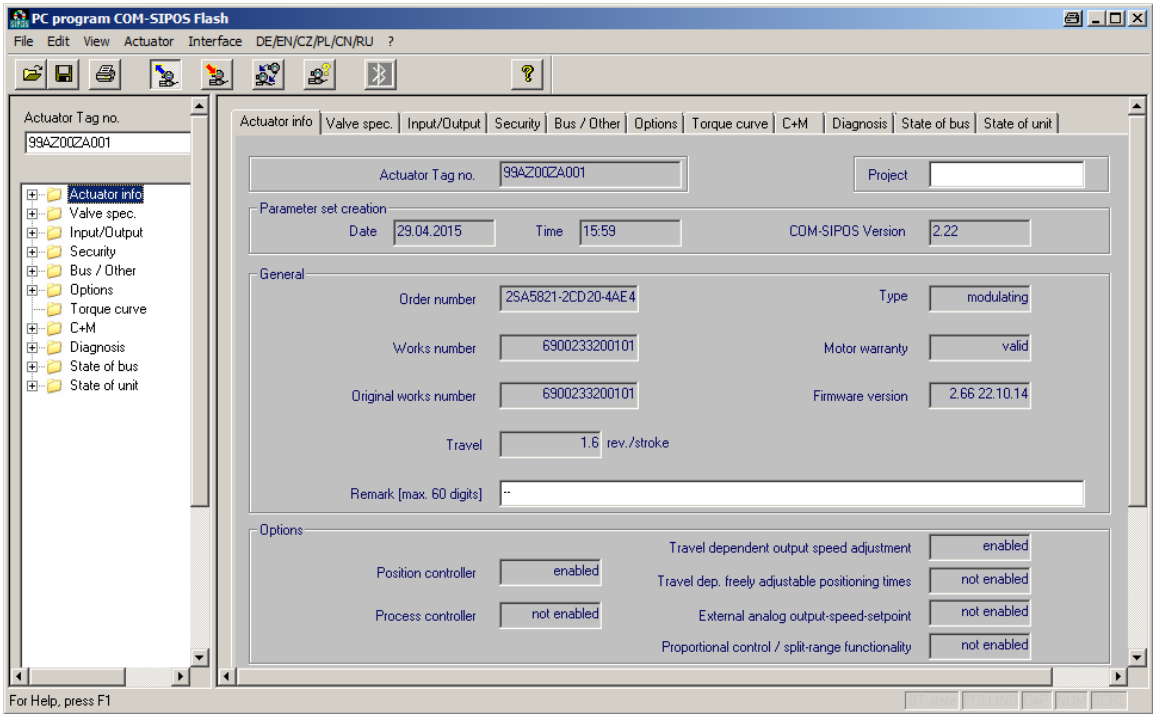

PC program COM-SIPOS Flash
File Edit View Actuator Interface DE/EN/CZ/PL/CN/RU ?
Actuator Tag no.
99AZ00ZA001
Actuator info
Valve spec.
Input/Output
Security
Bus / Other
Options
Torque curve
C+M
Diagnosis
State of bus
State of unit
Actuator info | Valve spec. | Input/Output | Security | Bus / Other | Options | Torque curve | C+M | Diagnosis | State of bus | State of unit
Actuator Tag no. 99AZ00ZA001
Project
Parameter set creation
Date 29.04.2015 Time 15:59 COM-SIPOS Version 2.22
General
Order number 2SA5821-2CD20-4AE4 Type modulating
Works number 6900233200101 Motor warranty valid
Original works number 6900233200101 Firmware version 2.66 22.10.14
Travel 1.6 rev./stroke
Remark [max. 60 digits] --
Options
Position controller enabled
Process controller not enabled
Travel dependent output speed adjustment enabled
Travel dep. freely adjustable positioning times not enabled
External analog output-speed-setpoint not enabled
Proportional control / split-range functionality not enabled
For Help, press F1

Fig.: COM-SIPOS start screen

There are dangerous high voltage levels inside the actuator. During communication, the cover of the electronics unit has to be removed, if required, depending on type and version. Avoid touching tracks or components on the boards with the fingers and prevent tracks or components coming into contact with metal objects.

By consulting the person responsible for the plant, obtain an assurance or establish that unintentional startup of the equipment cannot cause a disturbance in the plant or injury to persons. If a cut-off mode has been selected that is not appropriate for the valve, damage to the valve may result!

Highly sensitive CMOS semiconductor components are mounted on the printed circuit boards which are extremely sensitive to static electricity. Avoid touching tracks or components on the boards with the fingers and prevent tracks or components coming into contact with metal objects.

This manual is only complete in combination with the instruction manual of the respective actuator:

ECOTRON	Y070.019/GB,
PROFITRON/HiMod	Y070.020/GB.

2 Installation and program start

2.1 Scope of delivery

For **communication connection on the control board**,
i.e. no lead through, external COM-SIPOS connection and no Bluetooth interface
(cover of the electronics unit must be opened!).
Order no.: 2SX5100-3PC02 (Fig. 1)

- "COM-SIPOS PC parameterization program“ installation CD,
- 9-pole Sub-D null modem cable and
- USB serial adapter, incl. installation CD.

Fig. 1: Scope of delivery

For **communication via lead through external COM-SIPOS connection or with Bluetooth**,
(cover of the electronics unit must not be opened!).

This affects HiMod versions and actuators ordered with add. versions "S38“, "C50“ or "C51“.
Order no.: 2SX5100-3PC05

- "COM-SIPOS PC parameterization program“ installation CD.

2.2 System requirements

Hardware:

- Pentium 100 MHz, COM port or USB port, CD-ROM drive
- At least 5 MB of available hard-disk capacity
- 9-pin Sub-D null modem cable and USB adapter, if required (included in the scope of delivery) *
- 9 pin Sub-D RS232 computer cable (if the actuator is equipped with the external COM-SIPOS connection) *
- Bluetooth adapter (if actuator is equipped with Bluetooth interface) *

* also available as accessory part (see below!)

Operating System: Windows XP, Windows 7, etc.

For **communication with COM-SIPOS** via **serial interface RS232**
(9-pin Sub-D null modem cable or 9 pin Sub-D RS232 computer cable)
only laptops and **neither PCs nor programming devices** with mains connection must be used!

Accessories:

- **Null modem cable with USB adapter** (Fig. 2)
  for connection to the RS232 or USB port of the laptop.
  Order no.: 2SX5100-3PC01
  (already included in the "PC parameterization program COM-SIPOS" standard package, order no. 2SX51003PC02!)

  The serial USB adapter can also be ordered individually. Order no.: 2SX5100-3PC07.

Fig. 2: Null modem cable with USB adapter

- **9 pin Sub-D RS232 computer cable** (Fig. 3)
  for connection via external COM-SIPOS connection, i.e. if the actuator is equipped with a lead through round plug connector at the electrical connection (see chapter 2.5.2).
  Required for HiMod without Bluetooth interface and actuators order with add. version "S38".
  Order no.: 2SX5100-3PC06

Fig. 3: 9 pin Sub-D RS232 computer cable

- **Bluetooth adapter** (Fig. 4)
  for wireless communication with the actuator integrated Bluetooth interface.
  Required if the actuator was ordered with add. version "C50" or "C51".
  Order no.: 2SX5100-3PC08

Fig. 4: Bluetooth adapter

- **Bootstrap adapter** (Fig. 5)
  for connection to the RS232 interface.
  The bootstrap adapter is exclusively used for firmware updates for actuators delivered until the end of 2003, i.e. for actuators not yet equipped with a bootstrap slider and a reset push button on the control board (see chapter 2.5.1).
  Order no.: 2SX5100-3PC03

Fig. 5: Bootstrap adapter

- **PROFIBUS Master simulator** (Fig. 6)
  for connection to the RS 485 interface (PROFIBUS connector) of a PROFIBUS participant.
  The PROFIBUS master simulator can be used in COM-SIPOS to select the desired participant (actuator) via PROFIBUS address, download and change the actuator parameters and save them to the actuator and perform processes if the MASTER slave (communication to the DCS) is deactivated.
  Order no.: 2SX5100-3PC04

Fig. 6: PROFIBUS Master simulator

2.3 Installation

Insert the CD into the CD-ROM drive. The installation either starts automatically or by double-clicking the “Setup COM-SIPOS Flash.exe“ file on the CD.

Click on “Select Language“ first to select the user interface language of the installation program.

If previous COM-SIPOS versions are installed, this information will be displayed in the next window.

Click on the “Yes“ button to start the recommended de-installation of the former version(s) found on the computer. To delete these versions, simply acknowledge the following confirmation in English.

When the “Uninstall successfully completed“ or “Uninstall completed. Some elements…“ message appears, click “OK” to close “Remove Program From Your Computer“ window.

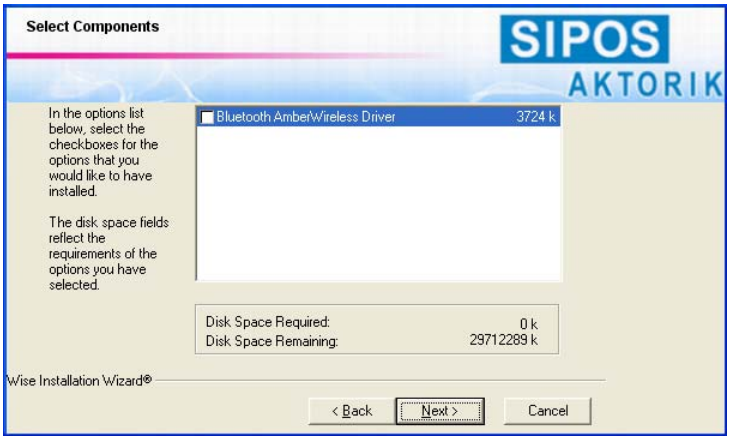
The uninstall routine is displayed for each former COM-SIPOS version found.

Recommendation: Have all former versions removed.

The actuator parameter files (extension: *.ste) contained in the former program directories “Setup COM-SIPOS Flash German“ or “Setup COM-SIPOS Flash English“ are retained in the stored directory!
COM-SIPOS Flash directories without actuator parameter files are completely deleted.

The actual installation of the current program version starts now ➔ Click “Next“ button ➔ Read and confirm “License Agreement“ with “I Agree“ ➔ “ReadMe File“, among others with the features of the new version.
Click “Next“ to get to the next step, “Destination Location“: Default setting for the target directory is: “C:\Program Files (x86)\COM-SIPOS Flash“.

Click "Next" to open the "Select Components" window. Select by clicking the check box. The selected component will be installed.


Select Components
SIPOS
AKTORIK
In the options list below, select the checkboxes for the options that you would like to have installed.
The disk space fields reflect the requirements of the options you have selected.
Bluetooth AmberWireless Driver
3724 k
Disk Space Required:
0 k
Disk Space Remaining:
29712289 k
Wise Installation Wizard®
< Back
Next >
Cancel

The available components were verified by SIPOS Aktorik and are safe.
Ignore subsequent information by clicking "Continue installation"!

In the following window, click “Next“ to start the actual copying procedure which is shortly displayed in another window.

“Finish“ in the last window completes the installation.

2.4 Start COM-SIPOS

Due to the installation, 3 links for starting the program were created (from version 2.12):

- Icon (Fig., item 1) on the desktop,
- Short-cut under ”Start ➔ All Programs“ (Fig., item 2) and
- as main entry under “Start ➔ All Programs ➔ COM-SIPOS Flash“ (Fig., item 3).

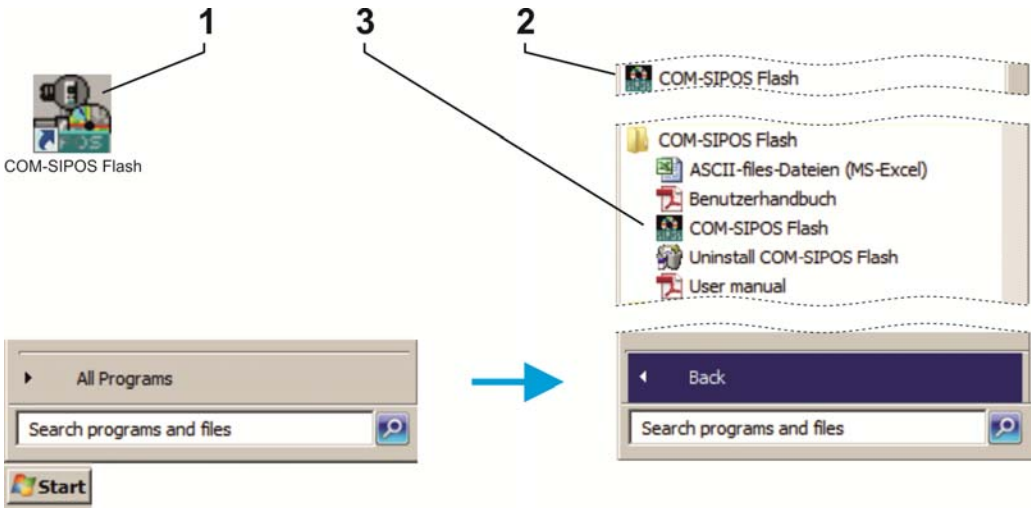


Fig.: Start COM-SIPOS

The user manuals in the available languages as well as “Uninstall COM-SIPOS Flash“ to remove the software from your laptop can be found under “Start\All Programs\COM-SIPOS Flash“.

After clicking one of the start options, the standard COM-SIPOS user interface will appear. The default language is that of the operating system (if COM-SIPOS does not support the language of the operating system, English is set as default). The setting of a different program language is described in chapter 5.6.

2.5 Establish connection

Depending on the version, there are three options for connecting the actuator to the laptop:

- **Standard connection via null modem cable**
  Connect the null modem cable to the RS232 interface on the control board while the electronics housing is open, see chapter 2.5.1.
- **Connection via external COM-SIPOS connection**
  Connect the 9-pin Sub-D RS232 computer cable to the round plug connector at the electrical connection, see chapter 2.5.2.
- **Connection with Bluetooth**
  The communication is wireless via the Bluetooth interface integrated in the actuator, see chapter 2.5.3.

- Avoid any electrostatic discharge (ESD) to any electronic part inside the SIPOS 5 while the electronics housing is open. Any ESD may damage some highly sensitive CMOS devices. Do not touch any electronic part with your hands or metallic tools!
- For **communication** via **serial interface RS232**
  (9-pin Sub-D null modem cable or 9 pin Sub-D RS232 computer cable)
  only **laptops** and **neither PCs nor programming devices** with mains connection must be used!

2.5.1 via null modem cable

To install the cable between laptop and SIPOS 5 actuator, open the cover of the local control unit of the actuator which is fastened with screws.

Connect the 9-pin plug of the null modem cable to the 9-pin interface plug (SUB-D socket) inside the actuator. This plug is located on the control PCB, see Fig. 1 and 2.

Fig. 1: Control PCB ECOTRON

Only use the null modem cable that is supplied with the software. Any damage on the actuator electronics caused by using wrong cables will void warranty!

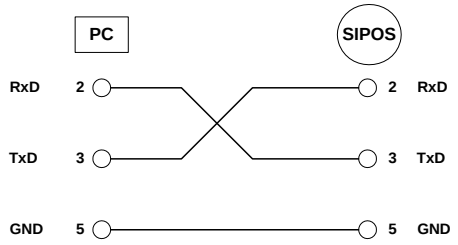
In case the computer used has no serial COM port but a USB port, a USB to serial adapter must be used. After installation of the adapter, please double-check the COM-port of the USB adapter.
This can be done under "Start ➔ Control Panel ➔ All Control Panel Items ➔ Device Manager ➔ Ports".

Fig. 2: Control PCB PROFITRON

- Actuators **delivered from Jan. 2004** are equipped with an integrated bootstrap slide and RESET button and can be connected to a **standard null modem cable**, see Fig. 3!
- Actuators **delivered until Dec. 2003**, see Fig. 4**, have to** be connected to a special null modem cable, which has the following wiring
(***only*** pins 2, 3 and 5)!

Fig. 3: Control PCB with RESET button

Fig. 4: Control PCB without RESET button



2.5.2 via computer cable

For actuators with an external COM-SIPOS connection, the RS232 interface is located in a dust and water tight round plug connector with quick disconnect coupling (9-pin Sub-D) on the electrical connection, see Fig. 5.

Remove the protective cap of the round plug connector on the actuator to fit the computer cable between laptop and the SIPOS 5 actuator. The cap is provided with a plastic band for retention.

Connect the round plug of the computer cable to the round plug connector at the actuator connection.

Fig. 5: External COM-SIPOS interface

2.5.3 via Bluetooth

Actuators equipped with Bluetooth interface are ready for operation on delivery (sliding switch in position “ON“). This is indicated by the illuminated blue LED after the mains voltage has been supplied.

For wireless communication with the actuator, a Bluetooth adapter must be connected to the USB port of the laptop, PC or programming device and the Bluetooth adapter installation (driver and application) must be completed.

Each Bluetooth device (slave) has a definite Bluetooth address for clear identification. In addition, each Bluetooth device is assigned a device name for easier selection. As a standard, this name consists of the plant identification number - if available - and the 9 digit works number.

Any connection to the actuator is indicated by the flashing white LED, perfectly visible from the distance.

1 **LED** (blue): Bluetooth activated

2 Sliding switch: ON ←→ OFF

3 **LED** (white flashing): Bluetooth connection to actuator is implemented

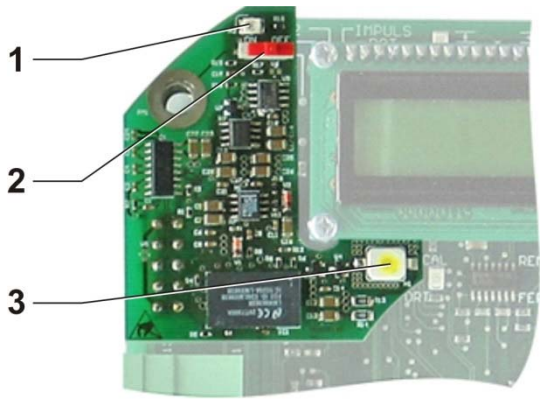


Fig.: Bluetooth PCB

- The Bluetooth function can be switched off via the ON/OFF sliding switch on the Bluetooth PCB!
- Bluetooth is supported as from firmware version 2.39!
- Direct firmware update via Bluetooth is possible for firmware version 2.61 and later!
- Enter the password “9044“ to establish connection!

2.6 Uninstall COM-SIPOS

Uninstalling COM-SIPOS Flash (from version 2.12):

”Start ➔ All Programs ➔ COM-SIPOS Flash ➔ Uninstall COM-SIPOS Flash”

Use the “Uninstall COM-SIPOS Flash“ command under ”Start\All Programs\COM-SIPOS Flash“ to remove the software again: Select Uninstall Method “Automatic“, then “Next“ to get to the next window and select “Finish“ to perform the uninstall procedure.

Always select this method to remove the COM-SIPOS PC parameterization program, otherwise it cannot be ensured that all actuator parameter files, which were saved via COM-SIPOS in the respective directory, are retained.

3 Reading and writing parameters

Read (download) and write (upload) of parameters

Actuator parameters		
How to …	**Description**	**perform steps**
Display	The actuator parameters are displayed in the tab sheets.	① ➔ ②
Change	After download of the parameters, it is possible to change them depending on the actuator type.	① ➔ ② ➔ ③
Save	All actuator parameters (customer and factory parameters), which include end position adjustment and operational data, can be saved in a file (2 kB). *We strongly recommend saving the actuator parameter files after successful commissioning for documentation and reference purposes (especially in case of an electronics replacement).*	① ➔ ④
Duplicate	This function is extremely helpful when installing a replacement electronics or a new control PCB, since all originally programmed customer and factory parameters including end position adjustments are uploaded into the replacement unit. *This results in an identical copy of the replaced unit and makes recommissioning obsolete after the replacement.*	① ➔ ④ ➔ ③
Print	The printed actuator parameters can be used for documentation purposes.	① ➔ ⑤
Send	The saved actuator parameters can be sent for evaluation as attachment to service@sipos.de .	① ➔ ④

Trouble shooting		
How to …	**Description**	**perform steps**
Display diagnosis and fault messages	This data is displayed in the tab sheets ”Diagnosis”, “State of bus“ and “State of Unit”. **In case possible faults cannot be resolved, please save the actuator parameters and send them to service@sipos.de .**	① ➔ ⑥

Firmware-Update		
How to …	**Description**	**perform steps**
Update	The installed firmware version is displayed in the tab sheet “Actuator info”. The current firmware version and a history table can be found on our website www.sipos.de.	① ➔ ⑦

Check wiring		
How to …	**Description**	**perform steps**
Actuator outputs ➔ DCS inputs	The wiring to the process control system can be checked independent of the actuator status.	⑧
DCS outputs ➔ Actuator inputs	The correct transmission of binary and analog control system output signals to the actuator as well as the fieldbus status of the actuator can be checked on the "**C+M**"tab.	① ➔ ⑨

Steps:

①	Read (download) actuator parameters	<< see chapter 3.1 >>
②	Display/change parameters on tab sheets	<< see chapter 7 >>
③	Write (upload) new/changed actuator parameters	<< see chapter 3.2 >>
④	Save downloaded actuator parameter file	<< see chapter 5.1 >>
⑤	Print a summary of actuator settings and diagnosis data. Example, see chapter 10.	<< see chapter 5.1 >>
⑥	Display diagnosis and state of unit data	<< see chapter 7.9, 7.10 and 7.11 >>
⑦	Update firmware	<< see chapter 4 >>
⑧	Check interface to the control system (DCS inputs)	<< see chapter 8 >>
⑨	Check the DCS outputs (actuator inputs)	<< see chapter 7.8 >>

3.1 Read actuator parameters

The data of the SIPOS 5 actuators can be downloaded for various purposes:

- Trouble shooting
- Documentation
- Availability of data in case of replacement of the electronics or the control PCB available.

☞ Therefore we strongly recommend downloading and saving the actuator parameters after successful commissioning! All actuator parameters, **including the end position adjustment,** can then be uploaded to replacement electronics. Provided that the gear unit was not disconnected from the valve, recommissioning after performing the replacement is not required!

Procedure:

(Steps 1 and 2 are not required for Bluetooth applications.)

1. Remove the cover of the electronics unit (not for external COM-SIPOS connection).
2. Connect null modem cable or computer cable to actuator serial interface (see chapter 2.5).

> If reading is to be performed via null modem cable despite available Bluetooth interface, set Bluetooth slider to "OFF“ (see chapter 2.5.3)!

3. Start COM-SIPOS (see chapter 2.4).
4. If necessary, select the correct interface, see Fig. 1 and 2
   (see also chapter 5.5).
   The set interface is stored until the next change (from COM-SIPOS version 2.12).

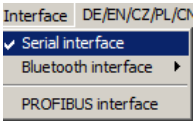


Fig. 1: Menu Interface

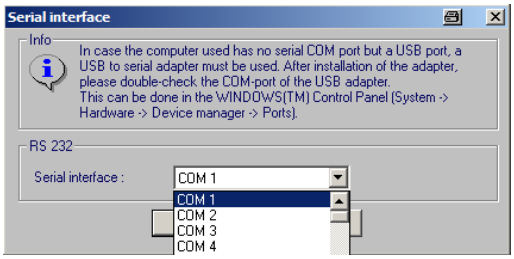

Serial interface
Info
In case the computer used has no serial COM port but a USB port, a USB to serial adapter must be used. After installation of the adapter, please double-check the COM-port of the USB adapter.
This can be done in the WINDOWS(TM) Control Panel (System -> Hardware -> Device manager -> Ports).
RS 232
Serial interface :
COM 1
COM 1
COM 2
COM 3
COM 4

Fig. 2: Select serial interface

5. Read (download) actuator parameters (see Fig. 3).
   ”Read parameter“contains all actuator parameters, i.e. both factory parameters and customer parameters which can be changed using COM-SIPOS, including end position adjustments and operational data.

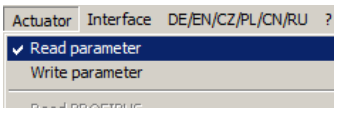


Fig. 3: Reading of actuator parameters

6. Define storage procedure (see Fig. 4).
   Name, revision history as well as storage location of an actuator parameter file (*.ste) can be preset via "Settings STE-file“, see also chapter 5.1

> The settings remain stored until next revision!
> New STE-files are stored with ´**"Save**“ in the preset folder with the set file name.
> If the STE-file setting is changed once again during an application, restart COM-SIPOS for activation!

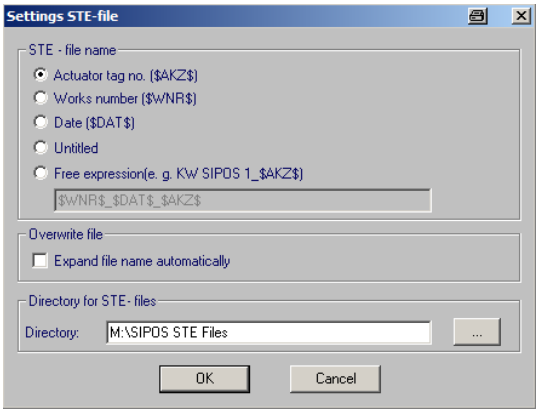


Fig. 4: Preset *.STE-files

7. Save actuator parameters
   (see fig. 5).

> - The created file has an “.ste” extension. The size is only a few bytes, ideal for sending via e-mail!
> - Select "**Save As**“, if no presetting was made, via "Setting STE-file“!

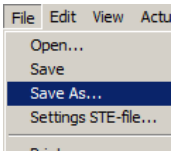


Fig. 5: Save actuator parameters

3.2 Write new/changed actuator parameters

3.2.1 to the actuator

If the customer parameters (e.g. tripping torque, output speed, etc.) were changed after reading out the actuator parameters using COM-SIPOS and if these changes are to become effective, perform an upload via ”Actuator“ menu, **"Write parameter"** menu item, see Fig. 1.

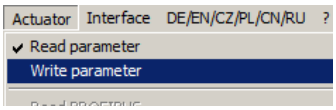


Fig. 1: Save changed parameters

3.2.2 to the replacement electronics

The following procedure has proved extremely useful when installing a replacement electronics unit since all actuator parameters read and stored from the original actuator (customer and factory parameters including end position adjustment and operational data) are uploaded to the new replacement part. This results in an identical copy of the replaced unit. Recommissioning after replacing a part would only be required if the gear unit of the actuator was also disconnected from the valve.

Procedure:

(Steps 1 and 2 are not required for Bluetooth applications.)

1. Remove the cover of the electronics unit (not for external COM-SIPOS connection).
2. Connect null modem cable or computer cable to actuator serial interface (see chapter 2.5).

> If reading is to be performed via null modem cable despite available Bluetooth interface, set Bluetooth slider to "OFF“ (see chapter 2.5.3)!

3. Start COM-SIPOS (see chapter 2.4).
4. If necessary, select the correct interface (see chapter 5.5).
5. **Open actuator parameter file (*.ste) of the <u>original actuator</u> in COM-SIPOS,** see Fig. 2 and 3.

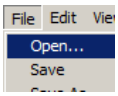


Fig. 2: Open STE-files

> For ECOTRON, the DIP switches and potentiometers must be set in accordance with the settings of the opened STE-file and confirmed with ➔ ON ➔ OFF at DIP switch S8!

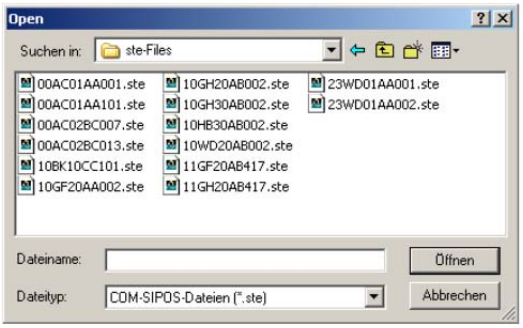


Fig. 3: Select actuator parameter file

6. **Write to replacement electronics.**
   Upload complete actuator parameters via "Actuator“ menu, "Factory parameter“ submenu,
   "Write EEPROM parameter“ menu item, see Fig. 4.

> For further information, please refer to the mounting instructions for replacement electronics Y070.073/GB!

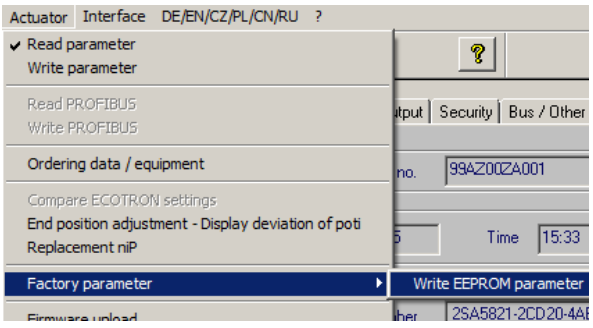


Fig. 4: Write actuator parameters

4 Update firmware

4 Update firmware

A firmware update is performed via the ”**Actuator**” menu, see Fig.

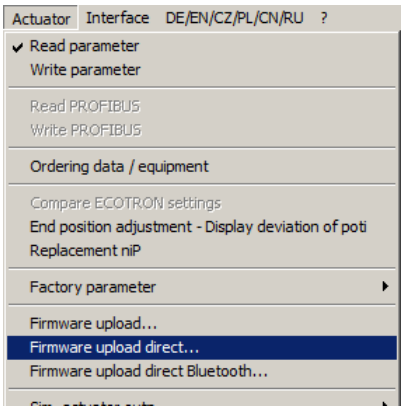


Fig.: Firmware upload

- Firmware updates can always be performed even if the actuator parameters were not read (downloaded) previously!
- Depending on the version ECOTRON, PROFITRON or HiMod and the delivery date as well as the firmware installed in the actuator and the availability of a Bluetooth interface, different options for uploading new firmware exist, refer to table below!
- The current firmware version, e.g.
  PR_V266c.bin for PROFITRON and HiMod, or
  EC_V266c.bin for ECOTRON
  as well as a history overview are available on our website (www.sipos.de)!
- During firmware update, the communication to the DCS is interrupted!

Version	Delivery date or installed firmware (FW)	Bluetooth interface	**Firmware upload direct Bluetooth…**	**Firmware upload direct…**	**Firmware upload…**
			Firmware update, see chapter **…**		
HiMod	from FW 2.61	yes	**4.1**	**4.2**	**4.3**
	until FW 2.60	yes			
PROFITRON	from FW 2.61	yes	**4.1**	**4.2**	**4.3**
	from FW 2.40 / 2.53	yes			
	from 2004				
	until 2003				**4.4**
ECOTRON	from 2004				**4.3**
	until 2003				**4.4**

Procedure:

1. If necessary, select the correct interface (see chapter 5.5).
2. **Select option for firmware update.**
   Select menu item for firmware update in the "Actuator“ menu:
   - ”**Firmware upload direct Bluetooth**“
     Select "Firmware upload direct Bluetooth“ menu item for PROFITRON and HiMod with Bluetooth interface from firmware version 2.61. ➔ Continue with **chapter 4.1**
   - ”**Firmware upload direct Bluetooth**“
     Select "Firmware upload direct Bluetooth“ menu item for PROFITRON and HiMod with Bluetooth interface from firmware version 2.40 or 2.53. ➔ Continue with **chapter 4.2**
   - ”**Firmware upload**“
     Select "Firmware upload“ menu item:
     - for ECOTRON,
     - for PROFITRON with firmware version up to 2.39 and
     - if upload with was either interrupted with "Firmware upload direct…“ or "Firmware upload direct Bluetooth“.

     ➔ For delivery date **from Jan. 2004**, continue with **chapter 4.3**

     ➔ For delivery date **up to Dec. 2003**, continue with **chapter 4.4**

4.1 via Bluetooth for PROFITRON and HiMod (from firmware 2.61)

A direct firmware upload via Bluetooth is only available for PROFITRON/HiMod actuators with Bluetooth interface as well as firmware version 2.61 and higher.

Procedure:

1. Connect Bluetooth adapter to USB port at laptop, PC or programming device.
   Correct installation of the Bluetooth adapter (drive and application) on this laptop, PC or programming device must be complete.
2. Select "**Firmware upload direct Bluetooth**" command in the "Actuator" menu,
   click **File** button and select desired firmware, e.g. PR_V266c.bin for PROFITRON and HiMod actuators, see Fig.

   The desired firmware must be located in a directory which can be accessed via laptop, PC or programming device!
3. Click **Start** button in the dialog window (Start button is locked for the duration of the data transfer).

   Available firmware version in the actuator (FW 2.61 and higher) is checked. The firmware upload will be aborted if the firmware version is not correct!

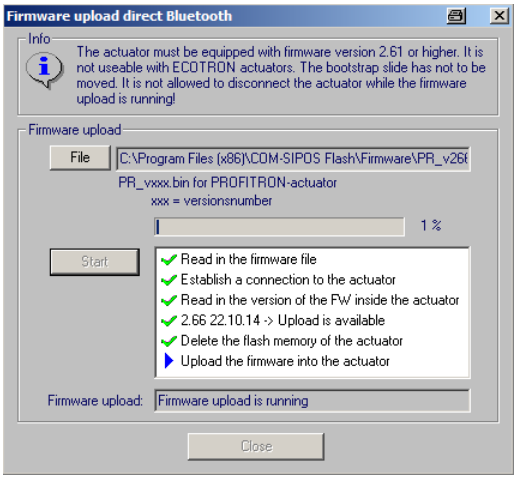

Firmware upload direct Bluetooth
Info
The actuator must be equipped with firmware version 2.61 or higher. It is not useable with ECOTRON actuators. The bootstrap slide has not to be moved. It is not allowed to disconnect the actuator while the firmware upload is running!
Firmware upload
File
C:\Program Files (x86)\COM-SIPOS Flash\Firmware\PR_v26
PR_vxxx.bin for PROFITRON-actuator
xxx = versionsnumber
1 %
Start
Read in the firmware file
Establish a connection to the actuator
Read in the version of the FW inside the actuator
2.66 22.10.14 -> Upload is available
Delete the flash memory of the actuator
Upload the firmware into the actuator
Firmware upload:
Firmware upload is running
Close

Fig.: Upload firmware via Bluetooth

   Transmission of the new firmware is displayed with the progress bar and may take several minutes (approx. 10 – 15 min).
   The new firmware is automatically started after the report „**Successfully done**" in the text window.
4. **Close** button closes the dialog box.

After the firmware is uploaded to the actuator, the current parameters can be downloaded with **Actuator ➔ Read parameter**. The firmware version is displayed in the "Actuator info" tab sheet.

If the direct firmware update is aborted (power supply of the actuator is switched off, Bluetooth connection aborted, firmware requirement is not met …), **the firmware was not or only partially loaded to the actuator!** In this case, upload the new firmware version once again according to chapter 4.3. "for actuators, delivered from 2004". Otherwise the actuator is not operable!

4 Update firmware

4.2 for PROFITRON and HiMod (from firmware 2.40/2.53)

A direct firmware upload is only available for PROFITRON/HiMod actuators with firmware version 2.40 or 2.53 and higher.

If the actuator has an external COM-SIPOS connection (HiMod without Bluetooth interface and for actuators ordered with add.version "S38“), you only have to connect the 9-pin Sub-D RS232 computer cable with quick disconnect coupling to the round plug connector on the electronics housing. The housing does no longer have to be opened.

If the actuator does not have an external COM-SIPOS connection, the electronics housing must be opened and the new firmware uploaded using the null modem cable.

4.2.1 with computer cable

Procedure:

1. Remove protective cap of the 9-pin SUB-D round plug connector on the electrical connection.
2. Connect computer cable (9-pin Sub-D RS232) with quick disconnect coupling to the 9-pin SUB-D round plug connector at actuator and the serial interface/USB port (using a USB serial adapter) to the laptop.
3. Select the "**Firmware upload direct**“ command in the "Actuator" menu, press **File** button and select desired firmware, e.g. PR_V266c.bin for PROFITRON and HiMod actuators, see Fig.

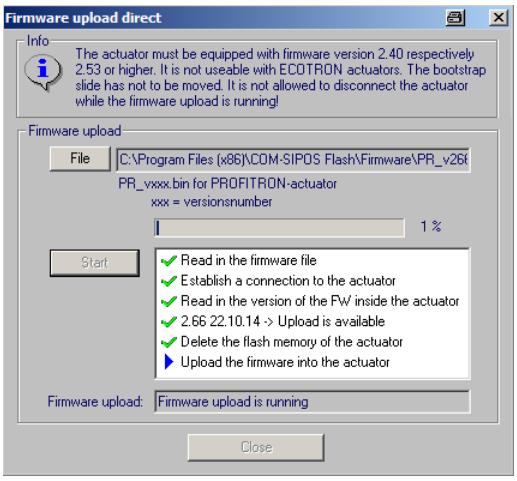

Firmware upload direct
Info
The actuator must be equipped with firmware version 2.40 respectively 2.53 or higher. It is not useable with ECOTRON actuators. The bootstrap slide has not to be moved. It is not allowed to disconnect the actuator while the firmware upload is running!
Firmware upload
File
C:\Program Files (x86)\COM-SIPOS Flash\Firmware\PR_v266
PR_vxxx.bin for PROFITRON-actuator
xxx = versionsnumber
1 %
Start
Read in the firmware file
Establish a connection to the actuator
Read in the version of the FW inside the actuator
2.66 22.10.14 -> Upload is available
Delete the flash memory of the actuator
Upload the firmware into the actuator
Firmware upload:
Firmware upload is running
Close

Fig.: Upload firmware via PC cable

> **The desired firmware must be located in a directory which can be accessed via laptop**!

4. Click **Start** button in the dialog window (Start button is locked for the duration of the data transfer).

> Available firmware version in the actuator (FW 2.40 or 2.53 and higher) is checked. The firmware upload will be aborted if the firmware version is not correct!

Transmission of the new firmware is shown in the progress bar.
The new firmware is automatically started after the report „**Successfully done**“ in the text window.

5. **Close** button closes the dialog window.
6. Disconnect quick-disconnect coupling, remove computer cable and fit protective cap.

After the firmware is uploaded to the actuator, the current parameters can be downloaded with **Actuator ➔ Read parameter**. The firmware version is displayed in the “Actuator info” tab sheet.

> If the direct firmware update is aborted (power supply of the actuator is switched off, computer cable is disconnected, firmware requirement is not met …), **the firmware was not or only partially loaded to the actuator!** In this case, upload the new firmware version once again according to chapter 4.3. ”for actuators, delivered from 2004“. Otherwise the actuator is not operable!
>
> An existing cable connection via computer cable does not have to be changed!

4.2.2 with null modem cable

Procedure:

1. Remove the cover of the electronics unit.
2. In case a Bluetooth interface is available, push sliding switch to OFF (see chapter 2.5.3).
3. Connect null modem cable to the SUB-D socket on the control PCB of the actuator and to the serial interface/ USB port (via USB to serial adapter) of the laptop.
4. Select „**Firmware upload direct**“ command in the "Actuator“ menu,
   click **File** button and select desired firmware, e.g. PR_V266c.bin for PROFITRON and HiMod actuators, see Fig.

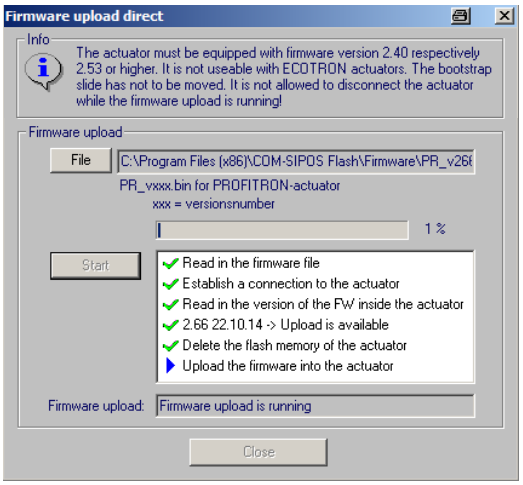

Firmware upload direct
Info
The actuator must be equipped with firmware version 2.40 respectively 2.53 or higher. It is not useable with ECOTRON actuators. The bootstrap slide has not to be moved. It is not allowed to disconnect the actuator while the firmware upload is running!
Firmware upload
File
C:\Program Files (x86)\COM-SIPOS Flash\Firmware\PR_v26
PR_vxxx.bin for PROFITRON-actuator
xxx = versionsnumber
1 %
Start
Read in the firmware file
Establish a connection to the actuator
Read in the version of the FW inside the actuator
2.66 22.10.14 -> Upload is available
Delete the flash memory of the actuator
Upload the firmware into the actuator
Firmware upload:
Firmware upload is running
Close

Fig.: Upload firmware with null modem cable

> **The desired firmware must be located in a directory which can be accessed via laptop**!

5. Click **Start** button in the dialog window (Start button is locked for the duration of the data transfer).

> Available firmware version in the actuator (FW 2.40 or 2.53 and higher) is checked. The firmware upload will be aborted if the firmware version is not correct!

   Transmission of the new firmware is shown in the progress bar.
   The new firmware is automatically started after the report ”**Successfully done**“ in the text window.
6. **Close** button closes the dialog window.
7. Disconnect null modem cable.
8. In case a Bluetooth interface is available, push sliding switch back to ON.
9. Fit the cover of the electronics housing with screws.

After the firmware is uploaded to the actuator, the current parameters can be downloaded with **Actuator ➔ Read parameter**. The firmware version is displayed in the “Actuator info” tab sheet.

> If the direct firmware update is aborted (power supply of the actuator is switched off, null modem cable is disconnected, firmware requirement is not met …), **the firmware was not or only partially loaded to the actuator!** In this case, upload the new firmware version once again according to chapter 4.3. ”for actuators, delivered from 2004“. Otherwise the actuator is not operable!
>
> An existing cable connection via null modem cable does not have to be changed!

4 Update firmware

4.3 for actuators delivered from 2004

Procedure:

1. Remove the cover of the electronics unit.
2. In case a Bluetooth interface is available, push sliding switch to OFF (see chapter 2.5.3).
3. Connect null modem cable to the SUB-D socket on the control PCB of the actuator or, for an external COM-SIPOS connection, the computer cable (9-pin Sub-D RS232) with quick disconnect coupling to the 9-pin Sub-D round plug connector and to the serial interface/ USB port (via USB to serial adapter) of the laptop.
4. Slide **Bootstrap** slider to the right in direction "BOOT", see Fig. 1.
5. Select "**Firmware upload**" command in the "Actuator" menu, click **File** button and select desired firmware, e.g. PR_V266c.bin for PROFITRON and HiMod actuators or EC_V266c.bin for ECOTRON, see Fig. 2.

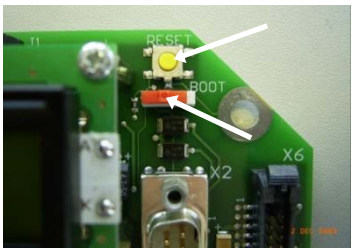


Fig. 1: Slider (→ BOOT) and RESET push button

> **The desired firmware must be located in a directory which can be accessed via laptop**!

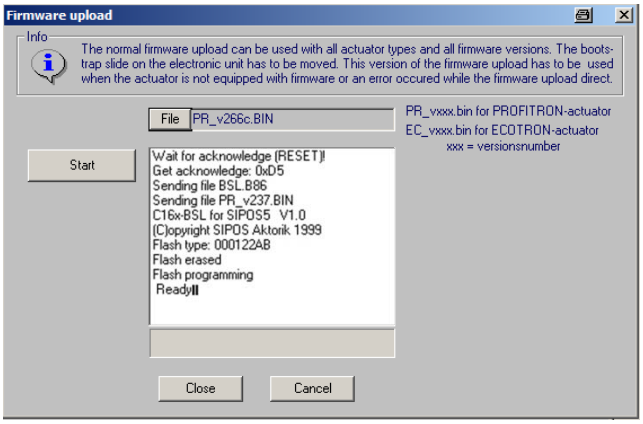

Firmware upload
Info
The normal firmware upload can be used with all actuator types and all firmware versions. The bootstrap slide on the electronic unit has to be moved. This version of the firmware upload has to be used when the actuator is not equipped with firmware or an error occured while the firmware upload direct.
File
PR_v266c.BIN
PR_vxxx.bin for PROFITRON-actuator
EC_vxxx.bin for ECOTRON-actuator
xxx = versionsnumber
Start
Wait for acknowledge (RESET)!
Get acknowledge: 0xD5
Sending file BSL.B86
Sending file PR_v237.BIN
C16x-BSL for SIPOS5 V1.0
(C)opyright SIPOS Aktorik 1999
Flash type: 000122AB
Flash erased
Flash programming
Ready!!
Close
Cancel

Fig. 2: Upload firmware

6. Click **Start** button in the dialog window (Start button is locked for the duration of the data transfer).
7. Press **RESET** push button, see Fig. 1. Transmission of the new firmware is shown in the progress bar. The new firmware is automatically started after the report "**Ready**" in the text window.
8. Slide **Bootstrap** slider to the left to initial position

> After a firmware update the bootstrap slider has to be moved in OFF position (= away from "BOOT") again. Otherwise the control PCB will stall in BOOT mode with next power-up! If this happens, move bootstrap slider to the left in OFF position and push RESET again!

9. **Close** button closes the dialog window.
10. Disconnect null modem cable or PC cable.
11. In case a Bluetooth interface is available, push sliding switch back to ON.
12. Fit the cover of the electronics housing with screws.

After the firmware is uploaded to the actuator, the current parameters can be downloaded with **Actuator ➔ Read parameter**. The firmware version is displayed in the "Actuator info" tab sheet.

> If the direct firmware update is aborted (power supply of the actuator is switched off, "Cancel" button is pressed, null modem cable is disconnected …), **the firmware was not or only partially loaded to the actuator!** In this case, repeat the procedure, otherwise the actuator is not operable:
> - Connect COM-SIPOS,
> - Switch actuator off and on again after approx. 30 sec,
> - Restart COM-SIPOS and
> - Repeat firmware upload!

4.4 for actuators delivered until 2003

Procedure:

1. Remove the cover of the electronics unit.
2. Connect **Bootstrap adapter** (BSL) to the SUB-D-socket on the control PCB of the actuator and the **null modem cable** specially supplied by SIPOS between the BSL and the serial interface/ USB port (via USB to serial adapter) of the laptop.
3. Slide **BSL** slider to the left into the **On** position, see Fig. 1 and 2.
4. Select "**Firmware upload**“ command in the "Actuator“ menu, click **File** button and select desired firmware, e.g. PR_V266c.bin for PROFITRON and HiMod actuators or EC_V266c.bin for ECOTRON, see Fig. 3.

> **The desired firmware must be located in a directory which can be accessed via laptop**!

5. Click Start button in the dialog window (Start button is locked for the duration of the data transfer).
6. Press “**R**” button (Reset) on the bootstrap adapter, see Fig. 1.

   Transmission of the new firmware is shown in the progress bar.
   The new firmware is automatically started after the report “**Ready**” in the text window.
7. **Close** button closes the dialog window.
8. Slide **BSL** slider to the right in position **Off**.
9. Disconnect bootstrap adapter and null modem cable.
10. Fit the cover of the electronics housing with screws.

Fig. 1: Bootstrap adapter

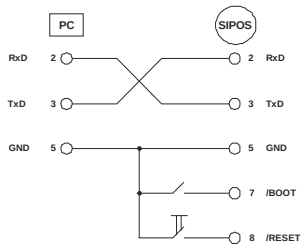


Fig. 2 Wiring diagram Bootstrap adapter

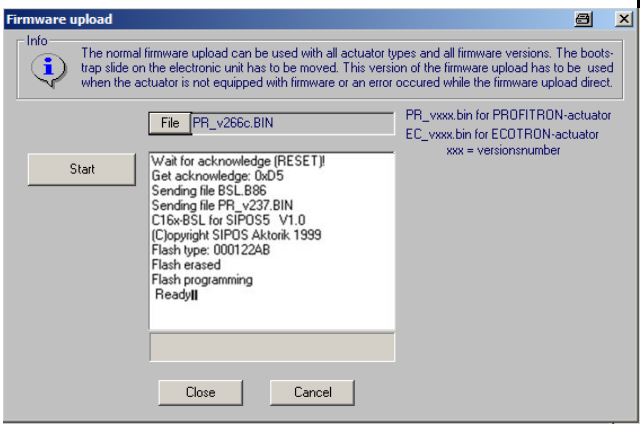

Firmware upload
Info
The normal firmware upload can be used with all actuator types and all firmware versions. The boots-trap slide on the electronic unit has to be moved. This version of the firmware upload has to be used when the actuator is not equipped with firmware or an error occured while the firmware upload direct.
File
PR_v266c.BIN
PR_vxxx.bin for PROFITRON-actuator
EC_vxxx.bin for ECOTRON-actuator
xxx = versionsnumber
Start
Wait for acknowledge (RESET)!
Get acknowledge: 0xD5
Sending file BSL.B86
Sending file PR_v237.BIN
C16x-BSL for SIPOS5 V1.0
(C)opyright SIPOS Aktorik 1999
Flash type: 000122AB
Flash erased
Flash programming
Ready!!
Close
Cancel

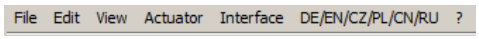
Fig. 3: Upload firmware

After the firmware is uploaded to the actuator, the current parameters can be downloaded with **Actuator ➔ Read parameter**. The firmware version is displayed in the “Actuator info” tab sheet.

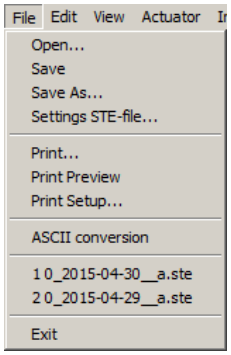
> If the direct firmware update is aborted (power supply of the actuator is switched off, “Cancel“ button is pressed, null modem cable is disconnected …), **the firmware was not or only partially loaded to the actuator!** In this case, repeat the procedure, otherwise the actuator is not operable:
> - Connect COM-SIPOS,
> - Switch actuator off and on again after approx. 30 sec,
> - Restart COM-SIPOS and
> - Repeat upload of firmware!

5 Menus

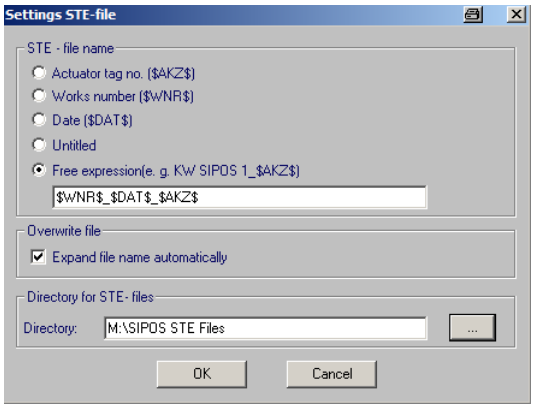
5 Menus



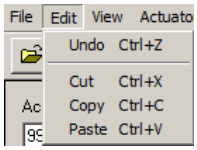
5.1 File



The **File** menu contains the following commands:

Open	Opens a parameter file stored on the laptop (*.ste).
Save	Once customer parameters have been changed, the actuator parameter file opened/downloaded from the actuator under the same name or in accordance with the settings under "**Settings STE-file**" on the laptop.
Save As	Saves the opened/ downloaded actuator parameter file under a defined file name and directory on the laptop.
Settings STE-file	File name, revision history (extension of the file name with a,b,…) and storage location of the actuator parameter files *.ste can be preset here. Free texts, e.g. plant designations and/or combinations of the suggested names can be selected. In the entered example, the file name consists of works number, date and actuator TAG no. 
Print	Prints a summary of the actuator settings and diagnosis data. Example, see chapter 10.
Print Preview	Shows the summary document as it will be printed.
Print Setup	Selects a printer and a printer port.
ASCII conversion	Saves the actuator parameters to a text file (*.txt) (see chapter 9).
Recent File	Shows up to 4 most recently opened actuator parameter files (*.ste).
Exit	Ends COM-SIPOS.

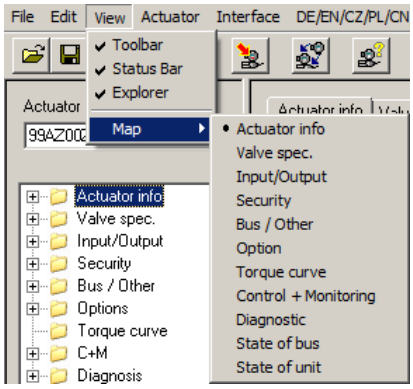
5.2 Edit



The **Edit** menu contains the following commands:

Undo	Cancels the last operation.
Cut	Deletes data from the document and transfers it to the clipboard.
Copy	Copies data from the document to the clipboard.
Paste	Inserts data from the clipboard into the document.

5.3 View

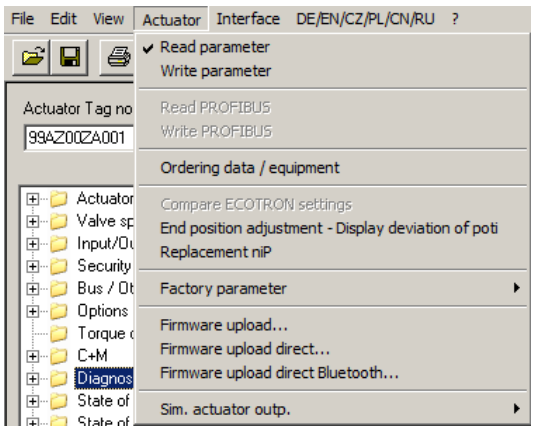


The **View** menu contains the following commands:

Toolbar	Switches the toolbar on and off.	Switching off is not recommended!
Status Bar	Switches the status bar on and off.	
Explorer	Switches the explorer on and off.	
Map	Selection of the tabs (see chapter 7).	

5 Menus

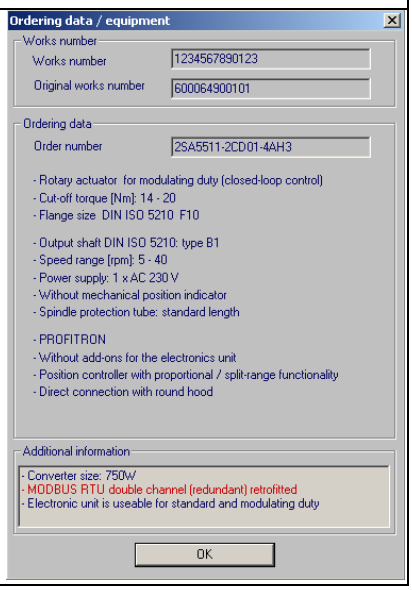
5.4 Actuator

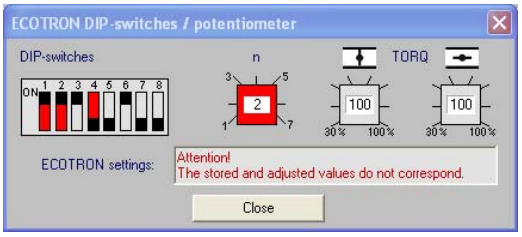
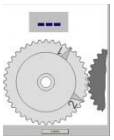
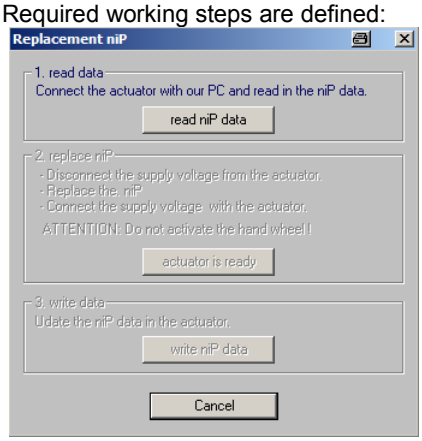


The **Actuator** menu contains the following commands:

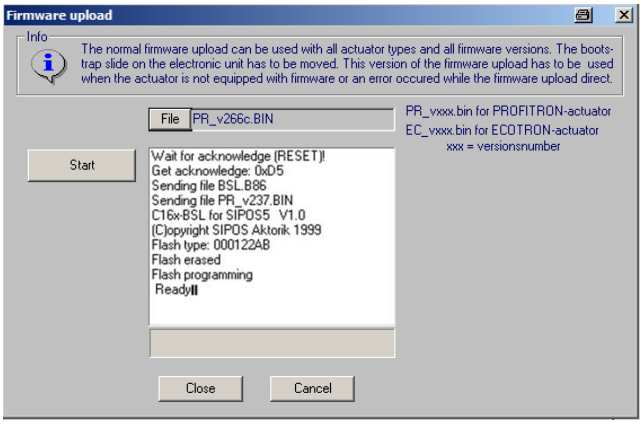
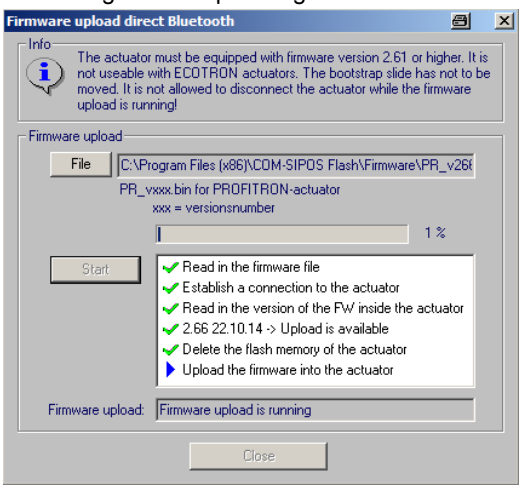
These commands cannot be executed if cyclic data update “Polling PC“ or “Polling Bus“ is activated under the “C+M“ tab sheet (chapter 7.8)!
Cyclic data update is indicated in the status bar via “POLLING“:

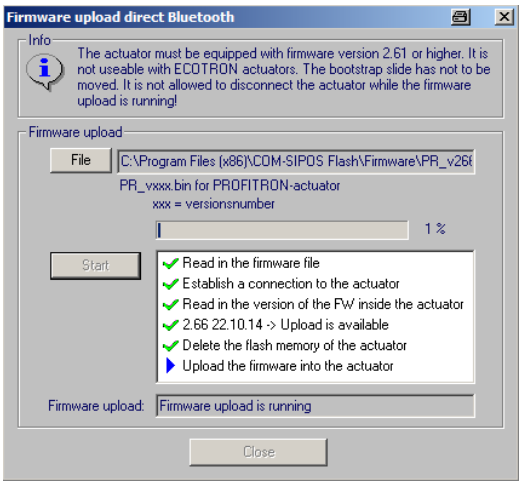
Read parameter	Reads (downloads) actuator parameters from actuator (customer parameters, factory parameters including end position adjustment and operating data) via COM-SIPOS.
Write parameter	Writes (uploads) customer parameters modified via COM-SIPOS to the actuator. Customer parameters comprises all parameters that can be changed via the actuator display (PROFITRON and HiMod), via the tabs of the COM-SIPOS PC parameterization program or via fieldbus. Exceptions: For ECOTRON those **parameters that have to be set via DIP switches and potentiometer** (e.g. speed, torques, control mode**,** etc.).
Read PROFIBUS	Reads (downloads) the actuator parameters from the actuator via the connected PROFIBUS Master simulator using COM-SIPOS. In the same way as “Read parameter“!
Write PROFIBUS	Writes (uploads) the customer parameters modified via COM-SIPOS to the actuator, using the connected PROFIBUS master simulator. In the same way as “Write parameter“!
Ordering data / equipment	Displays the actuator equipment delivered ex works. Software options activated at a later date (activated using a PIN code) and which automatically change the 15th digit of the order code have been taken into account. Subsequent changes of the mechanics as well as of the electrical connection are not accounted for. Retrofitting of a fieldbus interface or a "non-intrusive“ position encoder is detected and displayed in red letters in the **Additional information** field, e.g. "MODBUS RTU double channel (redundant) retrofitted“.


Ordering data / equipment
Works number
Works number
1234567890123
Original works number
600064900101
Ordering data
Order number
2SA5511-2CD01-4AH3
- Rotary actuator for modulating duty (closed-loop control)
- Cut-off torque [Nm]: 14 - 20
- Flange size DIN ISO 5210 F10
- Output shaft DIN ISO 5210: type B1
- Speed range [rpm]: 5 - 40
- Power supply: 1 x AC 230 V
- Without mechanical position indicator
- Spindle protection tube: standard length
- PROFITRON
- Without add-ons for the electronics unit
- Position controller with proportional / split-range functionality
- Direct connection with round hood
Additional information
- Converter size: 750W
- MODBUS RTU double channel (redundant) retrofitted
- Electronic unit is useable for standard and modulating duty
OK

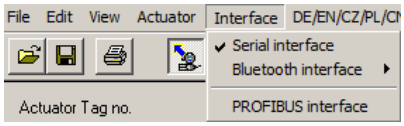
Compare ECOTRON settings	This function is only activated for ECOTRON. When accessing this function, the current settings of sliding switches at DIP switch as well as the potentiometer are read and compared to the values stored in the actuator. All deviations are marked in red.  Possible reasons for deviation: - Changes at the DIP switches or potentiometers were not confirmed with ➔ ON ➔ OFF at DIP switch S8, - Settings at DIP switches or potentiometers of the replacement electronics unit do not match the data of the actuator parameter file *.ste of the original actuator.
End position adjustment – Display deviation of potentiometer	This function is useful for separate actuator set-up, if the display of the electronics unit is not accessible. The value deviation of the potentiometer during end position adjustment as well as the direction of rotation of the central wheel required for zero adjustment are displayed. 
Replacement niP	Replacement of a "non-intrusive“ position encoder is supported by a dialog. Required working steps are defined:  Recommissioning is not required!
Factory parameters	Writes with the "Write EEPROM parameter“ command all parameters of the original parameter (customer parameters, works parameters including end position adjustment and operating data such as motor operating hours, number of cut-offs etc.) to the replacement electronics unit. After replacing the electronics unit, this function allows for easy and swift commissioning. For ECOTRON, the DIP switches and potentiometers must be preset in accordance with the settings of the opened STE-file and confirmed with ➔ ON ➔ OFF at DIP switch S8!

5 Menus

Firmware upload...	The "**Firmware upload…**" function must be selected for **ECOTRON** and **PROFITRON** with existing **firmware version up to 2.39**. The same applies if upload via "Firmware upload direct…" or "Firmware upload direct Bluetooth…" was interrupted. Settings (customer and factory parameters) in the actuator remain unchanged. The dialog box for uploading the new firmware to the actuator appears.  For the procedure for updating firmware, see **chapter 4.3** for delivery data **from Jan. 2004** or **chapter 4.4** for delivery date **up to Dec. 2003**
Firmware upload direct…	The "Firmware upload direct…" function allows for simple firmware update without sliding the Bootstrap slider located on the control board prior to and after updated as well as pressing the Reset button once the firmware upload has been started. Opening the electronics housing is not required if the actuator has an external COM-SIPOS connection. "**Firmware upload direct…**" is only possible for **PROFITRON** and **HiMod** with **firmware version from 2.40** or **2.53**. Settings (customer and factory parameters) in the actuator remain unchanged. The dialog box for uploading the new firmware to the actuator appears.  For the procedure for updating firmware, see chapter **4.2**

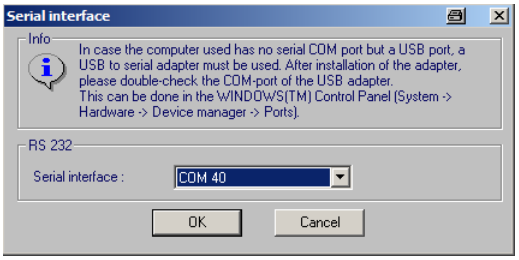
Firmware upload direct Bluetooth…	The "Firmware upload direct" function enables a contactless firmware update without opening the electronics housing. "**Firmware upload direct Bluetooth…**" is only possible for **PROFITRON** and **HiMod** with **Bluetooth interface** and **firmware version from 2.61**. Settings (customer and factory parameters) in the actuator remain unchanged. The dialog box for uploading the new firmware to the actuator appears.  For the procedure for updating firmware, see chapter **4.1**
Sim. actuator outp.	Check interface to the control system, see chapter 8.

5.5 Interface

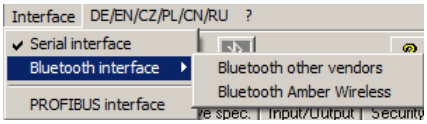
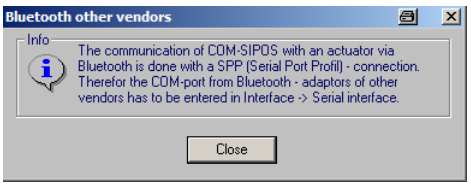
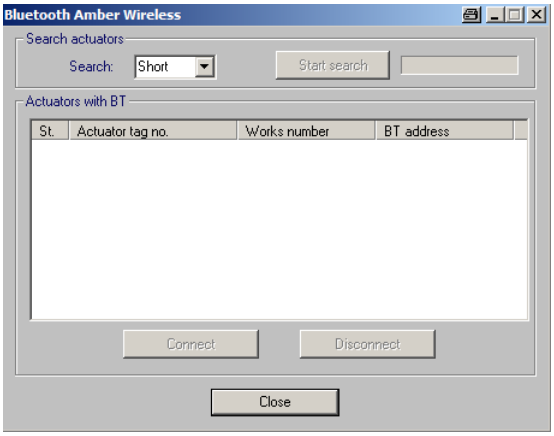
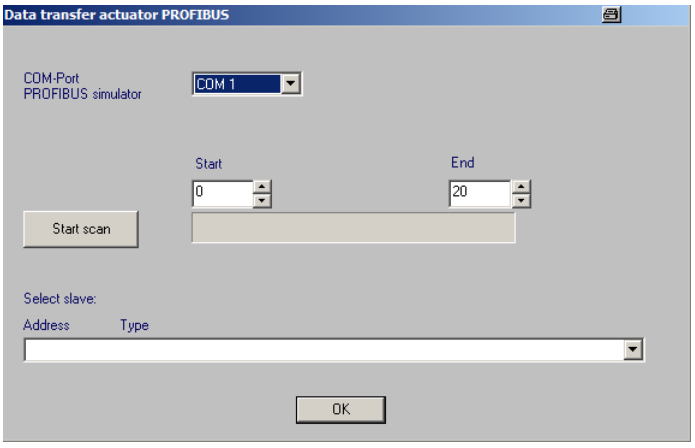


The set interfaces are stored until the next change (for COM-SIPOS version 2.12 and higher)!

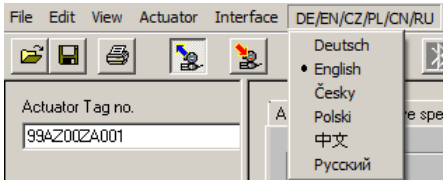
The **Interface** menu contains the following commands:

serial interface	Setting the port to which the null modem cable or computer cable or a Bluetooth adapter (except for Amber Wireless) is connected to the laptop. For Bluetooth applications, the SPP connection (Serial Port Profile) is made via the Bluetooth adapter software installed on the laptop, PC or programming device. Access to the actuator data is possible via "**Read parameter**"/"**Write parameter**" commands in the "**Actuator**" menu. 

5 Menus

Bluetooth interface	 **Bluetooth other vendors** For Bluetooth adapters other than Amber Wireless, the COM port has to be set via the "**Serial interface**" submenu. The following dialog box appears:  **Bluetooth Amber Wireless** Due to its lower range, the "Amber Wireless" Bluetooth adapter is used for demonstration purposes only. If the driver was installed during the installation of the COM-SIPOS version 2.18 and higher, no further setting is required. Access to the actuator data is possible via "**Read parameter**"/"**Write parameter**" commands in the "**Actuator**" menu. 
PROFIBUS interface	Setting the port to which the **PROFIBUS Master simulator** is connected. Furthermore, it is possible to scan for connected actuators that can be selected for communication. . "Start" and "End" mark the address range where connected PROFIBUS slaves are detected. The default setting is 0..20 to ensure a moderate scan time. Access to the actuator parameters is possible via "**Read PROFIBUS**"/"**Write PROFIBUS**" commands in the "**Actuator**" menu. 

5.6 DE/EN/CZ/PL/CN/RU



Use the **DE/EN/CZ/PL/CN/RU** menu to select the language.

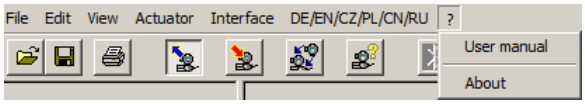
Currently, the German, English, Chinese, Polish, Czech and the Russian language are supported.

After installing the COM-SIPOS PC Parameterization program, the language of the operating system is set as default. If the language of the operating system is not available, English is selected.

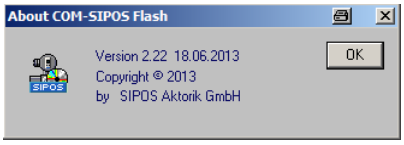
If required, perform language setting on laptop:
Start /Control Panel/All Control Panel Items/Region and Language.

The selected language is stored as default.

5.7 ”?“ (help)



The **?** menu contains the following commands:

User manual	PDF file of the COM-SIPOS user manual.
About	Indicates the status of the installed COM-SIPOS version: 

6 Direct commands via symbols

Frequently used commands can directly be executed with a single mouse-click on the icons in the icon bar.

	Opens an actuator parameter file stored on the laptop (*.ste). < equals “File“ ➔ “Open“ >
	Once customer parameters have been changed, the actuator parameter file opened/downloaded from the actuator under the same name or in accordance with the settings made using the "**Settings STE-file**“ command in the "**File**“ menu is saved on the laptop**.** < equals ”File “ ➔ ”Save“ >
	Prints a summary of the actuator settings and diagnosis data. Example, **see chapter 10.** Prior to printout, the actuator parameter file must be opened or read from the actuator connected selecting "Read Parameter“ in the "Actuator“ menu. < equals ”File “ ➔ ”Print“ >
	Reads the actuator parameters from the actuator (customer parameters, works parameters including end position adjustment and operating data) in COM-SIPOS. < equals ”Actuator“ ➔ ”Read Parameter“ >
	Writes the customer parameters modified via COM-SIPOS to the actuator. < equals ”Actuator“ ➔ ”Write Parameter“ >
	Writes all actuator parameters from the original actuator (customer parameters, works parameters including end position adjustment and operating data) to the replacement electronics unit. After replacing the electronics unit, this function allows for easy and swift commissioning. ☞ For ECOTRON, the DIP switches and potentiometers must be preset in accordance with the settings of the opened STE-file and confirmed with ➔ ON ➔ OFF at DIP switch S8! < equals ”Actuator“ ➔ ”Factory parameter“ ➔ ”Write EEPROM parameter“ >
	Shows information on the actuator equipment delivered ex works incl. subsequently activated software options. Retrofitting of a fieldbus interface or the "non-intrusive" position encoder was detected and displayed. < equals ”Actuator“ ➔ ”Ordering data / equipment“ >
	Only valid for the "Amber Wireless“ Bluetooth adapter! indicates that communication via Bluetooth is available – the Bluetooth adapter is connected to the laptop/PC/programming device and was detected; a connection to the actuator can be established. will be displayed if the "Amber Wireless" Bluetooth adapter is not activated. < equals ”Interface“ ➔ ”Bluetooth interface“ ➔ ”Bluetooth Amber Wireless >
	Shows information on the current COM-SIPOS version. < equals ”?“ ➔ ”About“ >

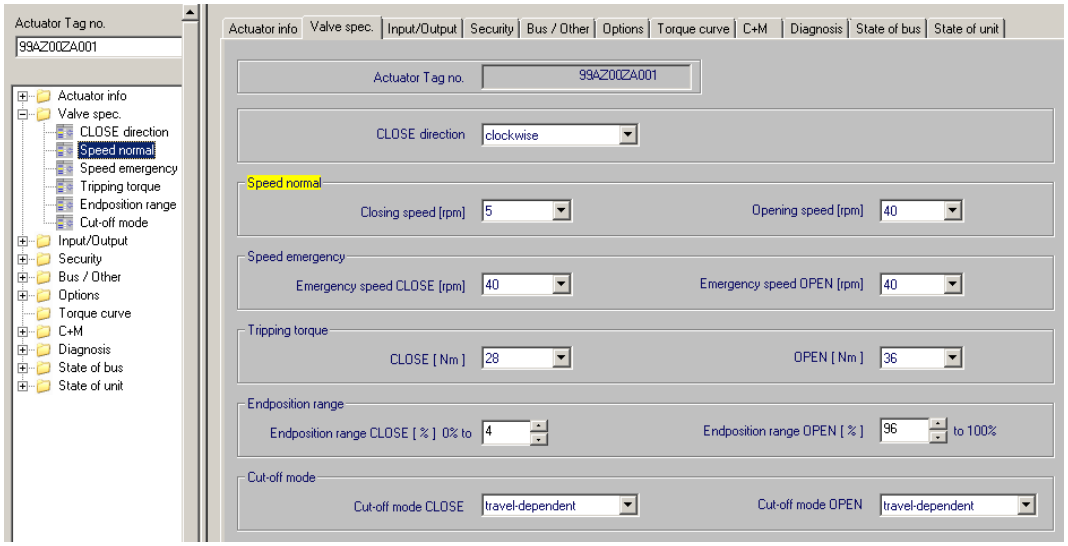
7 Tab sheets for parameters and current values

The actuator parameters and current values are shown on topic-specific tab sheets.

Click on the label to open the corresponding tab sheet.

Parameters can only be displayed once the connection between actuator and COM-SIPOS has been established (see chapter 2.5) and the actuator parameters have been read in COM-SIPOS! Depending on the purpose, it can either be a file stored on the laptop and opened with COM-SIPOS (see chapter 5.1, "File" menu, "Open" command) or the actuator parameter file read from the actuator (see chapter 5.4, "Actuator" menu, "Read Parameter" command)!

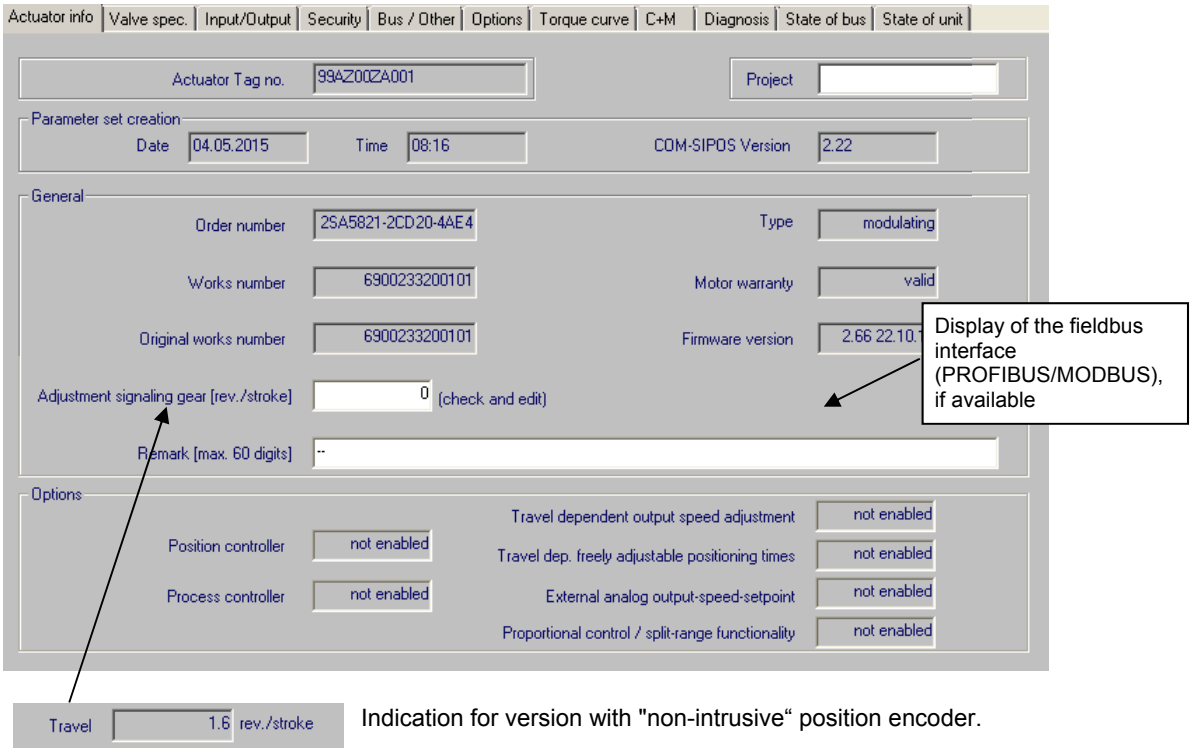
Direct selection of the selection of the searched parameters/current values can be made quickly via the lateral explorer navigation.
Clicking the desired topic in the explorer opens the respective tab and highlights the corresponding topic in yellow.



Actuator Tag no.	Actuator plant identification number. The Actuator TAG no. stored in the actuator is shown as identification in the field above the explorer and in most tabs. If the Actuator TAG no. has not yet been assigned, it can be entered in the field above the explorer or, if the explorer is closed, in the Actuator info tab. Select "Write Parameter" in the "Actuator" menu to accept the Actuator TAG no. and display it in all tabs.

7 Tab sheets for parameters and current values

7.1 Actuator info



Indication for version with "non-intrusive“ position encoder.

Project	Project name

Parameter set creation

Date	Date on which the actuator parameters were downloaded
Time	Time at which the actuator parameters were downloaded
COM-SIPOS Version	Parameters were downloaded with this COM-SIPOS version

General

Order number	Actuator order number
Type	Standard or modulating duty
Works number	13-digit number of the electronics unit for manufacturer identification of the actuator
Motor warranty	”valid” or “not valid”
Original works number	13- digit number of the originally delivered electronics unit (only in case of replacement). On delivery of an actuator works number and original works number are identical.
Firmware version	Version no. of the firmware (e.g. 2.66 22.10.14 ➔ Version 2.66 as of 22.10.2014)
Adjustment signaling gear [rev./stroke]	After successful commissioning, the user can enter the signaling gear adjustment for documentation purposes in the STE-file. The value is not stored within the actuator.
Travel [rev./stroke] / [mm] / [°]	The exact travel is shown for version with "non-intrusive" position encoder: "rev./stroke“ for rotary actuator, "mm“ for linear actuator and "°“ for part-turn actuator.
Remark [max. 60 digits]	The customer can enter a remark to be stored in the actuator parameter file. The max. number of digits that can be entered is 60.

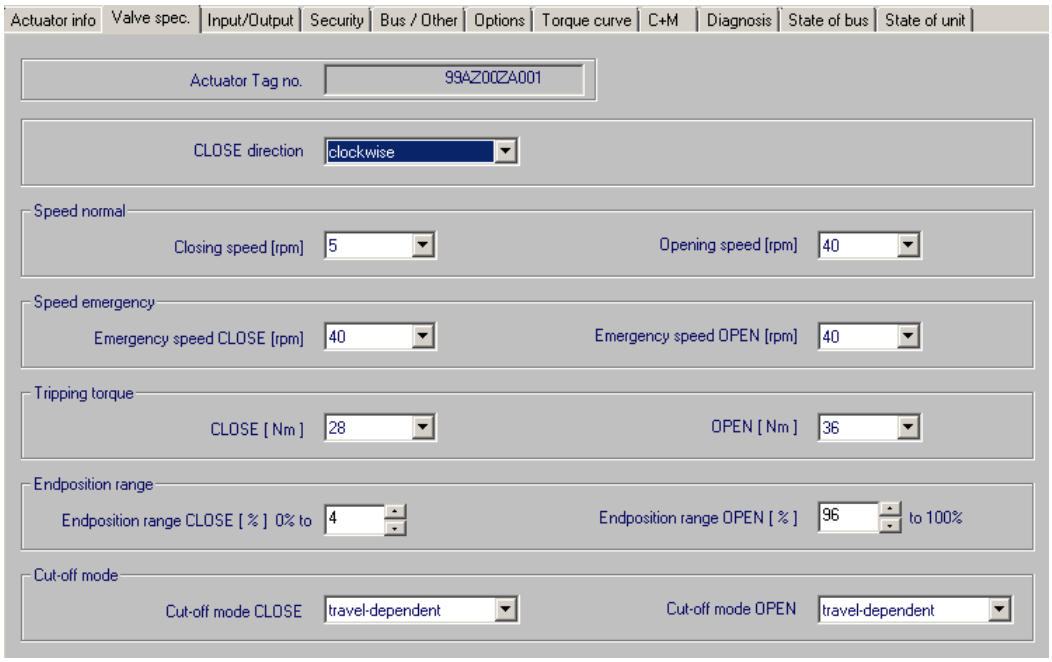
Options

Position controller	”enabled” or “not enabled ”
Process controller	
Travel dependent output speed adjustment	
Travel dependent freely adjustable positioning times	
External analog output-speed-setpoint	
Proportional control / split-range functionality	

Each software function can be activated at a later date, using a PIN code (PROFITRON and HiMod only)!

7.2 Valve spec.

For ECOTRON, only the end position ranges can be modified and stored in the actuator – further settings must be changed at the potentiometers and the DIP switch on the control board in the actuator!



CLOSE direction	”clockwise” or “anti-clockwise ”

If this parameter is changed and stored, new end position adjustment of the actuator must be performed!

Speed normal

Closing speed [rpm] / [mm/min] / [s/90°]	7 different speed or positioning speed or positioning time values 1.25 ... 160 rpm or 25 ... 320 mm/min or 10 ... 160 s/90 ° can be set within the type-dependent range (see actuator rating plate).
Opening speed [rpm] / [mm/min] / [s/90°]	

Speed emergency

Emergency speed CLOSE [rpm] / [mm/min] / [s/90°]	**EMERGENCY** speed or positioning speed or positioning time in **CLOSE** direction
Emergency speed OPEN [rpm] / [mm/min] / [s/90°]	**EMERGENCY** speed or positioning speed or positioning time in **OPEN** direction

Tripping torque

Tripping torque/-force CLOSE [Nm, kN]	Tripping-torque or cut-off force can be set in steps of 10 % of $T_{Cmax.}$ / $F_{max.}$. Standard version: $T_{Cmin.}$ = 30 % $T_{Cmax.}$ Modulating: $T_{Cmin.}$ / $F_{min.}$ = 50 % $T_{Cmax.}$ / $F_{max.}$
Tripping torque/-force OPEN [Nm, kN]	

End position range

End position range CLOSE [%]	Within the end position range, speed set to a predefined (slow) end position speed. In torque-dependent cut-off mode, a torque tripping within this range signals a valid torque cut-off, whilst outside the range, a fault will be signaled.
End position range OPEN [%]	

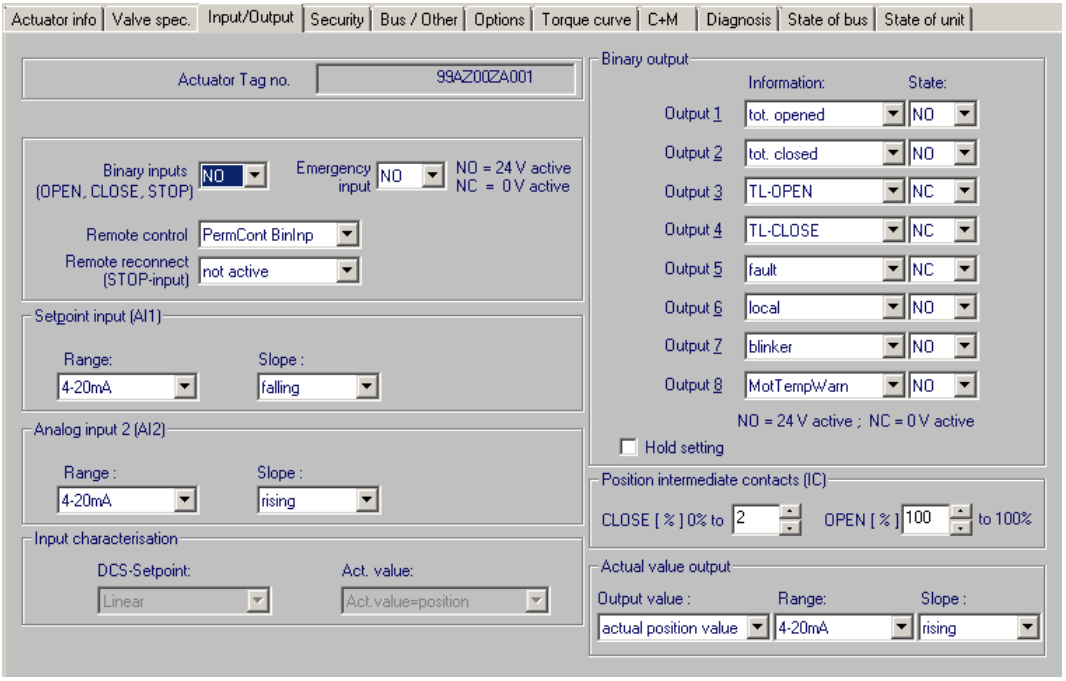
Cut-off mode

Cut-off mode CLOSE	”travel-dependent“ or ”torque dependent“ ☞ If this parameter is changed and stored, new end position adjustment of the actuator must be performed!
Cut-off mode OPEN	

☞
- For linear actuators, positioning speed [mm/min] and cut-off force [kN] are indicated instead of output speed [rpm] and torque [Nm]!
- For part-turn actuators the positioning time [s/90 °] is indicated instead of output speed [rpm]!

7.3 Input/Output

The parameters of the input and output signals for the DCS can only be changed for PROFITRON and HiMod.



Binary inputs (OPEN, CLOSE, STOP) **Emergency input**	The control level for the binary inputs can be set to: **24 V** (NO = normally open) **0 V** (NC = normally close). The level for the EMERGENCY binary input can be set separately (firmware version 2.14 and higher).
Remote control	Possible modes:
• ProcCntr CurrInp	Process controller with setpoint via analog input AI1
• ProcCntr bus inp.	Process controller with setpoint value via fieldbus
• ProcCntr fix setp.	Process controller with fixed setpoint
• PosCntr CurrInp	Positioner with setpoint via analog input AI1
• PosCntr bus inp.	Positioner with setpoint value via fieldbus
• tri-threshold	Control with setpoint via analog input AI1: 0...30 %=**CLOSE**, 30...70 %=**STOP**, 70...100 %=**OPEN**
• PermCont BinInp	Permanent contact signal via binary inputs with **OPEN** and **CLOSE** commands
• PermCont bus	Permanent contact signal via fieldbus with **OPEN** and **CLOSE** commands
• PulsCont BinInp	Pulse contact signal via binary inputs (**OPEN**, **CLOSE** and **STOP**) ☞ Control with remote pulse contact is available only if the mode remote reconnect is set to “non-active”!
• two-wire-control	Control via the OPEN input (active = **OPEN**, not active = **CLOSE**)
• Proportional BinInp • Proportional bus	Change of position proportional to pulse length - via binary inputs (Proportional BinInp) - via fieldbus (Proportional bus) **Change of position** [%] = $\frac{\text{pulse length}}{\text{run time}}$ x 100 % Run time setting is made within “Bus / Other“ tab sheet

Remote reconnect (Stop-input)	Possible second control mode:
• non-active	The control mode chosen via parameter “**Remote control**” is active - independent of the STOP signal.
• ProcCntr CurrInp • ProcCntr bus inp. • ProcCntr fix setp. • PosCntr CurrInp • PosCntr bus inp. • tri-threshold • PermCont BinInp • PermCont bus • two-wire-control • Proportional BinInp • Proportional bus	Binary **STOP signal is active** and parameter ”**Remote control**“ is not set to **”PulsCont BinInp“**: The control mode chosen here, via parameter “**Remote reconnect**“ is active. Binary **STOP signal is not active**: The control mode chosen via parameter ”**Remote control**“ is active.

Setpoint input (AI1)

Depending on the application and activated software function, this analog input can be used for the **position setpoint** or for **process setpoint.**

Range:	
• 0 mA – 20 mA	Detection of open-circuit behavior not possible (dead zero)
• 4 mA – 20 mA	Detection of open-circuit behavior is possible (live zero)
Slope:	
• rising	20 mA corresponds to 100 % OPEN
• falling	20 mA corresponds to 0 % OPEN

Analog input 2 (AI2)

Depending on the application and activated software function, this analog input can be used for the **external analog output speed setpoint** or for **input for the actual process value.**

Range:	
• 0 mA – 20 mA	Detection of open-circuit behavior not possible (dead zero)
• 4 mA – 20 mA	Detection of open-circuit behavior is possible (live zero)
Slope:	
• rising	20 mA corresponds to 100 %
• falling	20 mA corresponds to 0 %

Input characterization

This function is only available for control with positioner, ”Remote control“ via "PosCntr CurrInp“ or "PosCntr bus inp.“!
Curve adaptation is only possible for one of the two stored valve curves for slow or fast closing!

DCS-Setpoint:	
• Linear	Default setpoint curve
• Equal percentage	The actual position value of the actuator slowly follows the setpoint.
• Fast opening	The actual position value of the actuator precedes the setpoint.
Act. value:	If the "DCS Setpoint“ parameter was set to slow and fast opening, the actual value can be adapted accordingly:
• Act. value=position	The actual value signaled to the DCS corresponds to the actuator position.
• Act. value=acc. setpoint	The actual value signaled to the DCS corresponds to the defined setpoint.

Binary output

The "Output 1" to "Output 8" signal outputs can be adjusted as follows:

Information:	
• non-active	The signal is switched off.
	The signal is active when:
• tot. closed	the actuator has cut-off in the **CLOSE** end position.
• tot. opened	the actuator has cut-off in the **OPEN** end position.
• TL-CLOSE	the actuator has cut-off in **CLOSE** direction torque-dependently.
• TL-OPEN	the actuator has cut-off in **OPEN** direction torque-dependently.
• TL-CL or OP	the actuator has cut-off in **OPEN** or **CLOSE** direction torque-dependently.
• fault	a fault has occurred.
• blinker	the actuator is operating.
• ready	the actuator can be operated from “**local/remote**”.
• ready+remote	the actuator can be operated from “**remote**”.
• local	the actuator is in “**local**” or “**locPar**” mode.
• inter.cont.CL	the position of the actuator is between 0% and the position set in the “**Intermediate contact CLOSE**“ parameter.
• inter.cont.OP	the position of the actuator is between the position set in the “**Intermediate contact OPEN**“ parameter and 100%.
• MotTempFault	the maximum motor temperature has been exceeded.
• MotTempWarn	the motor warning temperature has been exceeded.
• ExtVoltFault	low voltage or high voltage has been detected, or power supply has been failed.
• maintenance	a maintenance period has elapsed.
• Run. ind. close	the actuator is running in direction **CLOSE.**
• Run. ind. open	the actuator is running in direction **OPEN**.
State:	
• NO	i.e. 24 V DC signal = active.
• NC	i.e. 0 V signal = active.
Hold setting	
• ☐	Parameterization of the signal outputs can be changed.
• ☑	Adjusted parameterization of the signal outputs is retained until COM-SIPOS PC parameterization program is quit or deactivated. During "Read parameter“ of another actuator, the parameterization of the signal outputs of the latter is not considered and the stored parameterization is accepted.

Position intermediate contacts (IC)

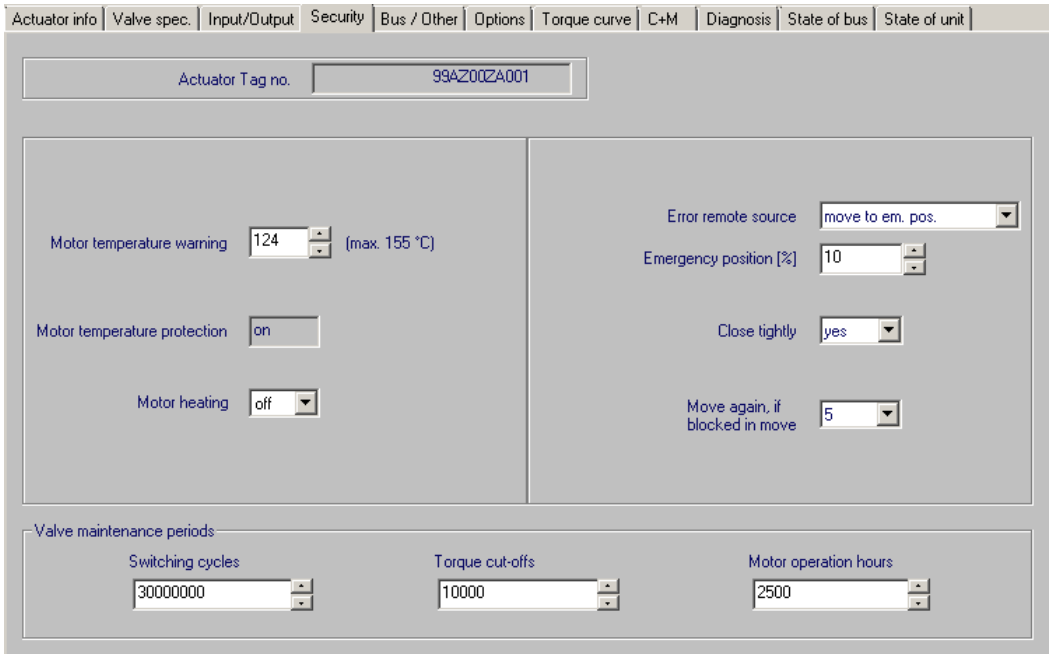
CLOSE [%] 0% to	The output signal “inter.cont.CL” is active within the range between 0% and the set value.
OPEN [%] … to 100%	The output signal “inter.cont.OP” is active within the range between the set value and 100%.

Actual value output

The **actual position value** or the **actual process value** (if process controller is active) can be signaled via the analog output.

Output value:	
• actual position value	
Range:	
• 4 mA – 20 mA	Detection of open-circuit behavior is possible (live zero)
• 0 mA – 20 mA	Detection of open-circuit behavior not possible (dead zero)
Slope:	
• rising	0 % = 0/4 mA, 100 % = 20 mA
• falling	0 % = 20 mA, 100 % = 0/4 mA

7.4 Security



Motor temperature warning (max. 155 °C)	Limit temperature for the “Warning motor temperature” signal
Motor temperature protection	Indicates whether the motor protection is active or not active. The motor protection can only be switched off for PROFITRON/HiMod und only via the push buttons at the actuator!
Motor heating	Here, you can activate the motor heating that ensures an average temperature of the motor of approx. 5 degrees C above the ambient temperature, thus preventing condensation. The motor heating is recommended if the actuator is used in extremely fluctuating climatic conditions!

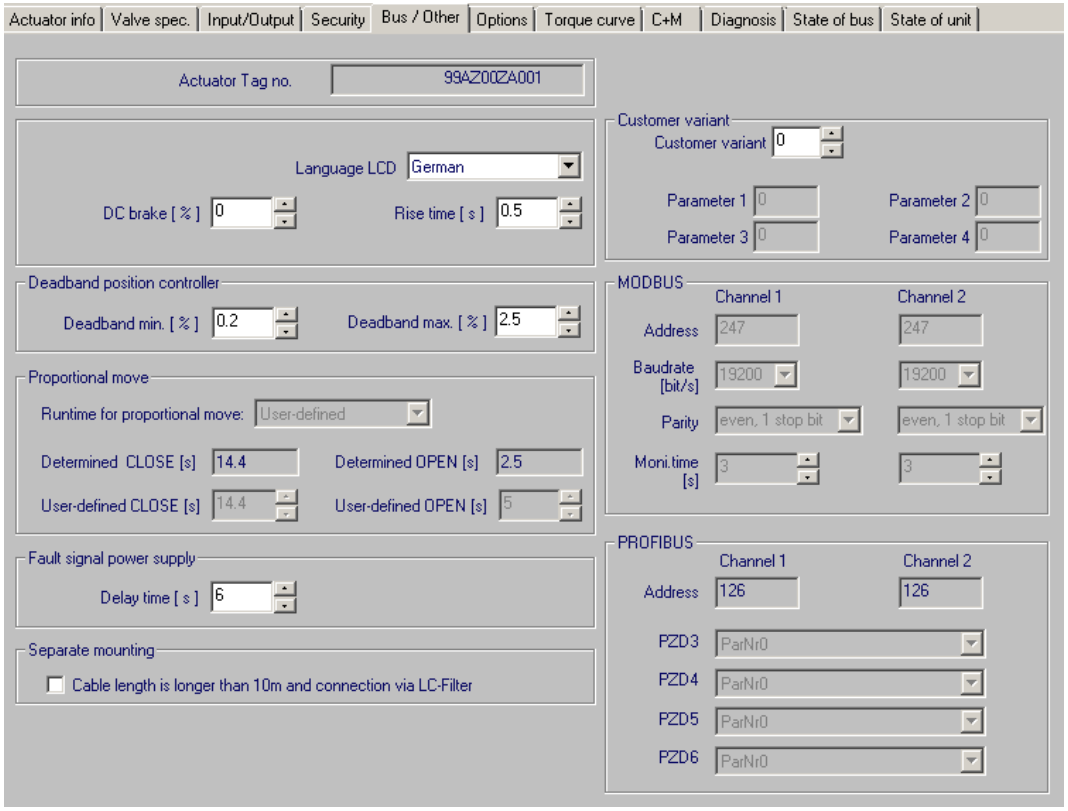
Error remote source	Here you can program the response to a detected open circuit. All inputs of the current remote control source (analog, binary or fieldbus) are monitored. The possible settings are:
• keep position	Stay in current position.
• move to em. pos.	Move to parameterized EMERGENCY position.
• keep process act. value	The current actual process value is retained (process controller only).
• move to fixed proc. setp.	The fixed process setpoint is approached and retained (with process controller only).
Emergency position [%]	When the emergency command is active or open circuit is detected, if the “Error remote source”. parameter is set to “**move to em. pos.**”, the actuator automatically moves the valve to this position.
Close tightly	If within an end position range of the remote control command in direction of this end position is activated, the internal travel command remains activated until torque-dependent cut-off has been effected or until a remote control command in the opposite direction has been given. The “close tightly“ function is only possible in conjunction with the “torque-dependent cut-off“ mode. ☞ If the internal positioner "PosCntr ...“,or process controller “ProcCntr ..." is used in conjunction with "travel-dependent cut-off", the control pulse is also extended until the end position (0 %/100 %) is reached, in the same way as with the “Close tightly “ function!
Move again, if blocked in move	Automatic retry (max. 5x) to get over torque block (when outside travel limit range), 0...5 adjustable, 0 ➔ no repeated start

Valve maintenance periods

☞ These maintenance limits have nothing to do with maintenance for the actuator and are only intended for maintenance planning of the valve!

Switching cycles	These settings can be used to define maintenance intervals at which the actuator should activate the “maintenance” signal. Intervals can be set for “**Switching cycles**” and/or ”**Torque cut-offs**” and/or “**Motor operation hours**”.
Torque cut-offs	
Motor operation hours	

7.5 Bus / Other



Language LCD	Language of the texts in the actuator display.
DC brake [%]	With a value equal to zero (**DC brake = off**), the inverter reduces the output frequency as fast as possible to zero (→ ramp-down to standstill). **Thereby, the fastest braking effect without dc brake is achieved.** Values not equal to zero start the so-called “DC-brake” mechanism: after the stop command and a short break (100..200ms for flux reduction in the induction motor) a DC current is supplied to the motor. The value is set in per cent of the motor’s rated current. The higher the value, the better the braking effect but the higher the motor warming!
• 0% ... 250%	Value of motor current in % of rated motor current during DC braking, influences motor heating and control accuracy. **Recommendation**: set value to **0**!
Rise time [s]	Ramp-up time from standstill to a predefined frequency. The shorter the time, the higher the acceleration of the motor (→ fast control, higher load on actuator and valve) and the higher the line current.
• 0.1 s ... 1 s (standard) • 0.1 s ... 2 s (module.)	Time from motor switch-on to reaching the maximum speed; influences the control accuracy/ switch-on duration. Default setting is **0.5 s**

Dead band position controller

The positioner is an adaptive positioner, i.e. the dead band (response threshold) is continuously and automatically adapted to the controlled system. Depending on the process requirement, the minimum and maximum values of the dead band can be set.

Dead band min. [%]	0.2%... 5% Default setting is **0.2%**.
Dead band max. [%]	0.2% ... 5% Default setting is **2.5%**.

Proportional move

☞ This function is only available for "Remote control“ via "Proportional BinInp“ or ”Proportional bus“!

The run time (positioning time from one end position to another) is required for proportional move. The actuator is able to determine this value, or the user performs a measurement and presets the value.

Proportional operation is supported from firmware version 2.40.

Runtime for proportional move:	
• Autom. detection	Automatic determination of run time.
• User-defined	Run time is defined by the user.
Determined CLOSE [s]	After a new end position adjustment or change of the ramp-up time, the run time is determined anew. For correct determination, the actuator must be operated at least 3 % in one direction of the total travel.
Determined OPEN [s]	
User-defined CLOSE [s]	The run times for OPEN and CLOSE can be subject to different settings. Possible setting for the operating time: 5 to 3276 s. Default setting is **60 s**.
User-defined OPEN [s]	

Fault signal power supply

Delay time until "Low voltage" or "Power supply fault" fault signal is set.

Delay time [s]	If the mains voltage exceeds the tolerance of -10 %/+15 % the fault signal will not be set until the delay time has expired. Possible setting for the delay time: 0 to 25 s. Default setting is **6 s**.

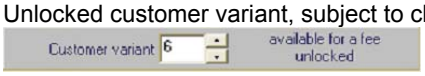
Separate mounting

☞ Correct parameterization is important for fault-free operation of the actuator!

Cable length exceeding 10 m and connection via LC filter	For incorrect setting, a block might not be detected and the actuator switches off for lower torque.
• ☐	Setting if no separate mounting or separate mounting of less than 10 m is used.
• ☑	Setting for separate mounting of more than 10 m with LC.

Customer variant

Unauthorized setting of customer variants can lead to damage to the actuator/valve/plant!

Customer variant	Customer specific programming varying from standard firmware is coded with a number different from “0” (see appendix to instruction manual for specific customer variant). Some customer-specific software programming is not free of charge. The activation and therefore payment of such a customer variant is stored in the firmware on actuator delivery and will still be available after a firmware update! Customer variants subject to charges are displayed and whether they are activated or not: - Unlocked customer variant, subject to charges:  - Locked customer variant, subject to charges: Any locked customer variant may be activated at a later date by entering the appropriate PIN (subject to charges!) at the actuator.
Parameter 1 **Parameter** **Parameter 3** **Parameter 4**	Certain customer-specific programming options have variable setting values. Via "**Parameter 1**“ to "**Parameter 4**“, the variables can be set in accordance with the specifications in the supplementary operation instructions of the customer variant.

The following communication parameters can be set separately for each channel:

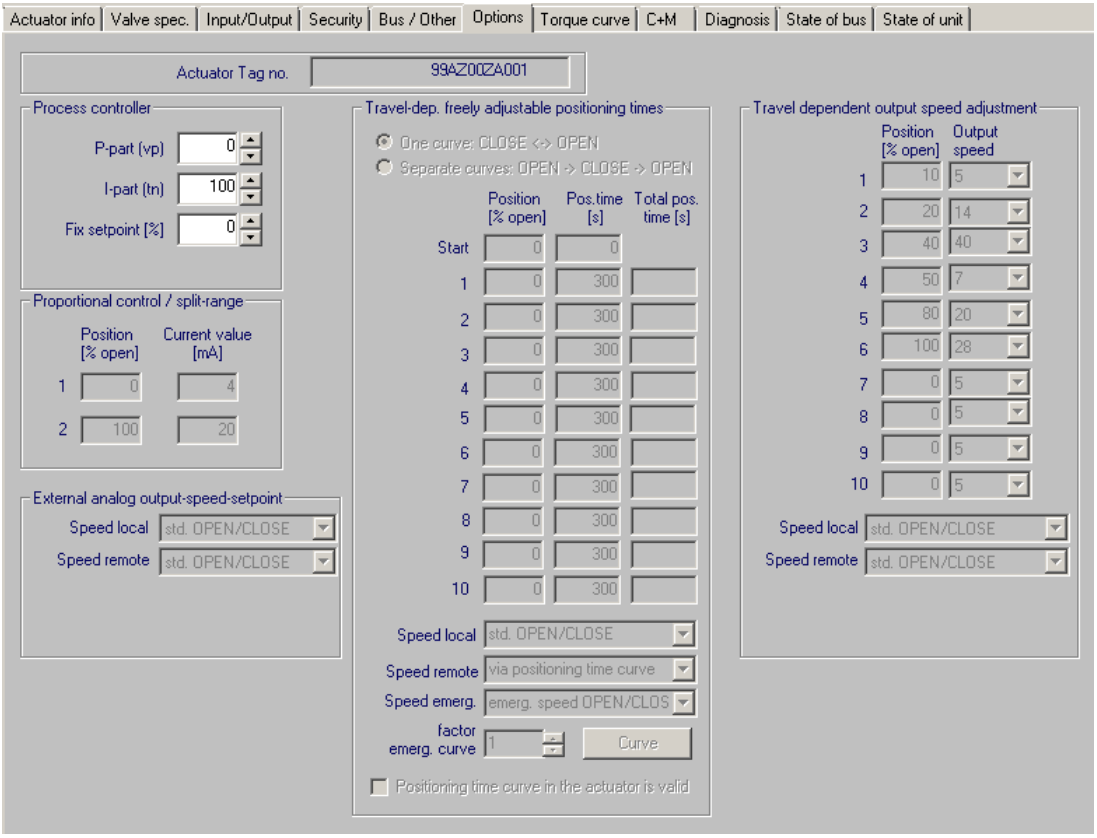
MODBUS

Address	Enter the bus address (default works setting is 247).
Baudrate [bit/s]	Possible setting for the transmission rate: 300 to 38400 Baud. Default setting is **19200 Baud**.
Parity	
• even 1 stop bit • odd 1 stop bit • none 2 stop bits	Even parity or odd parity with 1 stop bit or no parity with 2 stop bits can be set. Default setting is **even 1 stop bit**.
Moni.time [s]	The connection control time can be adjusted between 0.1 and 25.5 s. Default setting is **3 s**.

PROFIBUS

Address	Enter the bus address (default works setting is 126). **Important** for firmware versions **up to 2.34**! The actuator has to be turned off and on to verify the new bus address. Voltage reset; also turn off the 24 V DC supply, if applicable! If the control board has a RESET push button, it is also possible to press the RESET push button to verify the new address.
PZD 3 **PZD 4** **PZD 5** **PZD 6**	Process data range: When choosing the PROFIBUS telegram PPO2, here the data can be defined that is always to be transferred in the cyclic PROFIBUS telegram as PZD 3 to PZD 6.

7.6 Options



Process controller

The process controller is implemented as PI-controller and can be activated for firmware version 2.22 and higher. The process controller output is used as setpoint for the internal position controller. Depending on the version, the setpoint feed for the process controller differs (process setpoint) and is programmed via the "Remote control“ and/or ”Remote reconnect“ parameter, see chapter 7.3.

P-part (vp)	Gain Vp can be set within the range of 0 to +1.00. Default setting is **0.**
I- part (tn)	Settling time Tn can be set within the range of 0.1 – 3000.0 s. Default setting is **100 s**.
Fix setpoint [%]	Fixed percentage specification of the process setpoint for the process controller.

Proportional control / split-range

The split range function controls two and more actuators in series with just one analog signal 0/4 – 20 mA. A programmable portion of the analog signal is attributed to each actuator. The most important application is the bypass of two actuators.
With the proportional function, the analog signal 0/4 – 20 mA controls a programmable portion of the travel.

The setpoint curve is specified by entering a value pair (input current [mA] and the respective position [%]) for the start and another value pair for the end of the curve.

Position [% open]	Current value 1 for position 1 (current value 1 has to be less than current value 2) Current value 2 for position 2 (position 2 has to be not equal to position 1)
Current value [mA]	

External analog output-speed-setpoint

Setting of the output speed setpoint (positioning speed/positioning time) via the Analog input 2 (AI2) according to the settings in the “Input/Output“ tab sheet.
The output speed follows the analog signal in 7 stages within the set output speed range.

☞ The **fixed** end position speed applies inside the **end position ranges** (type-dependent speed step)!

Speed local • std. OPEN/CLOSE • via speed input (AI2) **Speed remote** • std. OPEN/CLOSE • via speed input (AI2)	The external analog output speed setpoint can be chosen separately for remote and local operation. With the “**std. OPEN/CLOSE**” parameter value the actuator operates with set parameters **”closing speed**” and “**opening speed**”. With the parameter value “**via speed input (AI2)**” the actuator operates according to the setpoint signal 0/4-20 mA. ☞ If the **EMERGENCY command** is present, the actuator is operated at the parameterized speed "Emergency speed CLOSE“ or "Emergency speed OPEN“ in the ”Valve spec.“ tab according to the behavior set under "Error remote source“ in "Security“ tab!

Travel-dep. freely adjustable positioning times

This function enables positioning time definition with an accuracy of seconds of up to 10 consecutive sections of the travel.
The subdivision of the travel for operation in OPEN and CLOSE directions can be equal to "**One curve**” or different to "**Separate curves**“.
“Separate curves“ is activated in the following representation:

○ **One curve:** **CLOSE <-> OPEN**	Programming is performed from direction CLOSE to direction OPEN.
◉ **Separate curves:** **OPEN -> CLOSE -> OPEN**	Parameterization is performed from 100 % OPEN to CLOSE and then back to 100 % OPEN again.

By defining up to 10 value pairs (”position [% OPEN]“ and “Pos.time [s]“) the required positioning times may be set according to the process. An entered positioning time t_n describes the time from the last entered position x_{n-1} to position x_n.

Position [% open]	Position in % of travel.
Pos.time [s]	Operating time in seconds for operation from the last to the position of this value pair.
Speed local • std. OPEN/CLOSE • via positioning time curve **Speed remote** • std. OPEN/CLOSE • via positioning time curve **Speed emerg.** • emerg.speed OPEN/CLOSE • via emergency curve	The positioning time settings can be specified separately for local, remote and emergency mode. The operating times set "**via positioning time curve**“ or "**via emergency curve**“ are achieved using "soft pulsing". Actuator operates according to the mean speed, calculated on the basis of the curve data. For setting "**std. OPEN/CLOSE**“ or "**emerg.speed OPEN/CLOSE**“, the actuator operates at the speeds parameterized in the "Valve spec.“ tab.
factor emerg. curve	Factor for faster (values < 1) or slower (values > 1) operation during EMERGENCY control. All positioning times adjusted in the curve are multiplied by this factor.
Curve	Click this button to view the evolution of the travel-operating time curve.
Positioning time curve in the actuator is valid	
• ☐	Settings are not yet stored within the actuator.
• ☑	Settings were read out from the actuator.

Travel dependent output speed adjustment

The function enables linearization of the valve curve by defining different speeds during operation from CLOSED to OPEN and vice versa.

☞ The **fixed** end position speed applies inside the **end position ranges** (type-dependent speed step)!

The speed curve is specified by entering up to ten value pairs: Position [% open] in 1 % increments, Output speed in the 7 steps of the speed range.

The speed curve is completely parameterized when the next interpolation point produces a lower percentage value for the actuating distance (e.g. default value 0 %).The speed of the last active interpolation point is valid until reaching the end position range OPEN.

Position [% open]	Position in % of travel.
Output speed	Selection for 7 different speeds within the speed range.
Speed local • std. OPEN/CLOSE • via n curve **Speed remote** • std. OPEN/CLOSE • via n curve	The speed settings can be defined separately for local and remote mode. For "**via n curve**“ setting, the actuator runs at travel-dependent parameterized speeds. For setting "**std. OPEN/CLOSE**“, the actuator operates at the speeds parameterized in the "Valve spec.“ tab. ☞ If the **EMERGENCY command** is present, the actuator is operated at the parameterized speed "Emergency speed CLOSE“ or "Emergency speed OPEN“ in the ”Valve spec.“ tab according to the behavior set under "Error remote source“ in "Security“ tab!

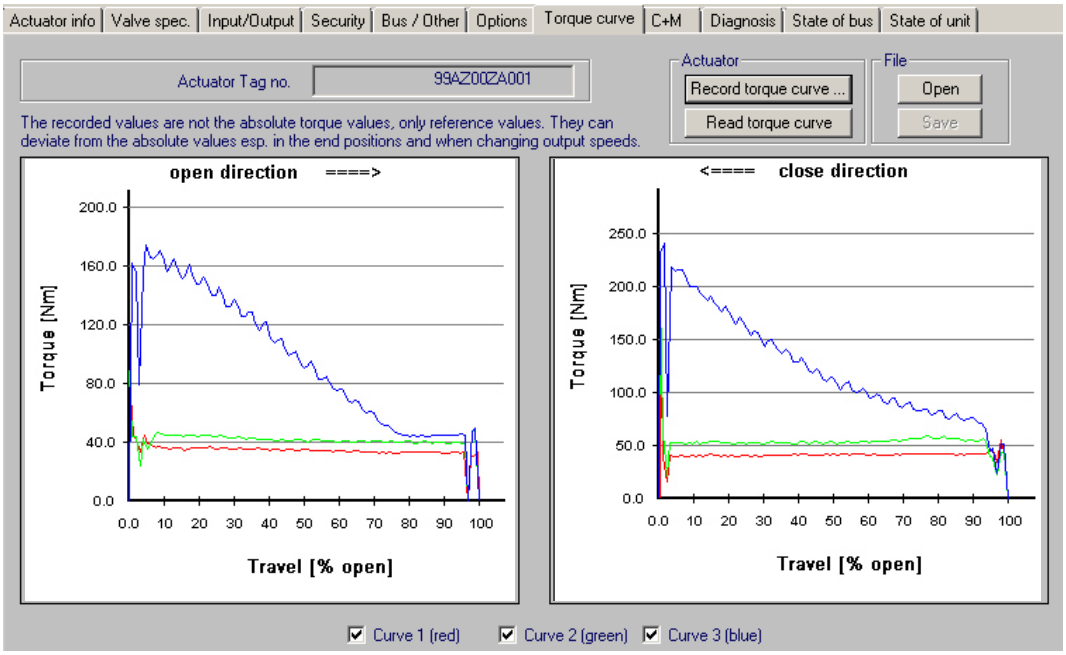
7.7 Torque curve

Torque reference curves

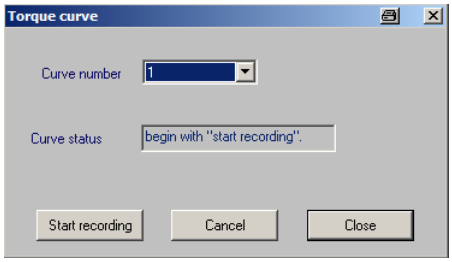
Pre-emptive valve maintenance is possible through comparison of up to 3 recorded torque reference curves recorded in time intervals. The recorded values are not the absolute torque values, only reference values. They can deviate from the absolute values especially in the end positions and when changing output speeds. For linear actuators, the cut-off force [kN] is indicated as reference value. The torque reference curves can be displayed with COM-SIPOS.
A comparison of the reference curves is only possible for identical actuator settings and the same conditions in the valve.
In the example shown below a significant increase of the required torque can be seen for CLOSE direction (curve 3 blue).

Prerequisites are:

- Actuator type: 2SA5, 2SB5 or 2SC5 in PROFITRON or HiMod version!
- The actuator is mounted on the valve!
- Actuator is ready for operation!



Actuator

Record torque curve	Click "**Record torque curve**" to open the dialog window for recording torque reference curves.  After "**Start recording**", the actuator runs to the CLOSE end position then to the OPEN end position and back to CLOSE end position. The status of the recording is displayed in the “Curve status” field. In case of a fault: "**is not possible**" is displayed. After recording, the data is stored in the actuator memory and must be read for visualization via "**Read torque curve**“.

Read torque curve	After clicking on "**read torque curve**" all 3 possible torque reference curves are read out (not recorded curves are neglected) and then displayed in the "Torque curve" tab sheet.

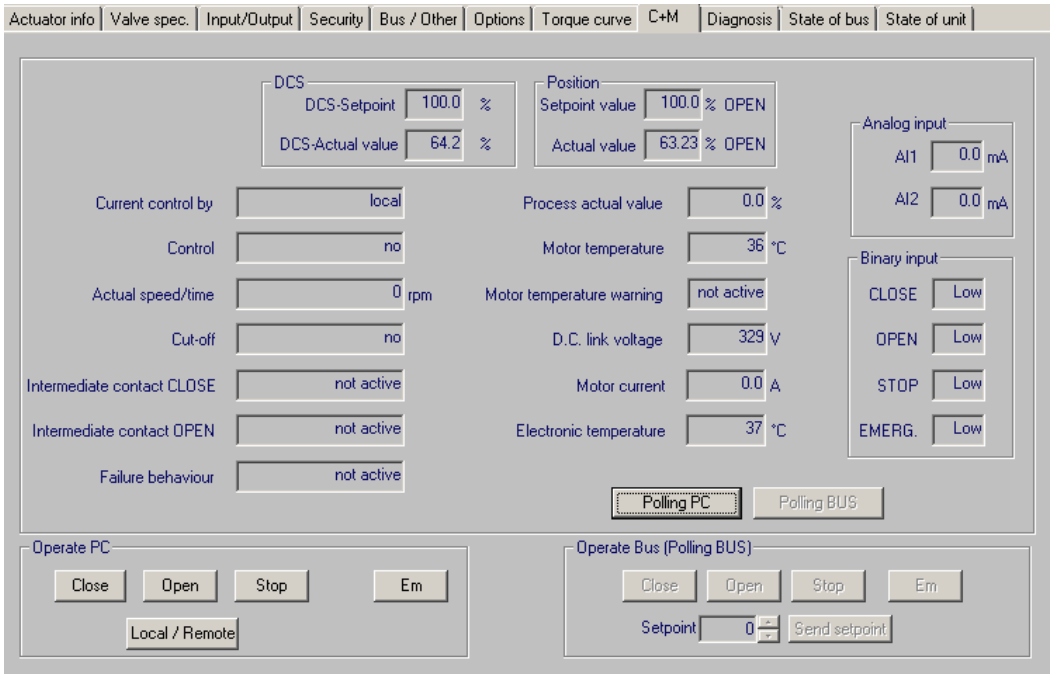
- **Malfunctions** during recording (blockage of the stroke, cancellation by the operator, failure of the power supply, etc.) are indicated on the LC display of the actuator by "**error while rec.**"!
- The **canceled recording** or curve is **not** transferred to the **permanent memory**. For **diagnosing the malfunction** ("**observing**" menu), however, the fragmental **curve** remains in the buffer (RAM) **until** the **next power OFF** (mains and auxiliary voltage) and can be downloaded from the actuator in the usual way!

File

With this option, recorded torque curves can be saved or opened for viewing under the "Torque curve" tab sheet.

Open	**Open torque curve file** Standard file menu box appears. The data is read out from the file and displayed as torque curve in the "Torque curve" tab sheet.
Save	**Save torque curve as file** The curve data is saved in ASCII format.

7.8 C+M (Control and Monitoring)



DCS

This field is only displayed for control with positioner with parameterized input characterization to "**Equal percentage**" or "**Fast opening**", see "**Input/Output**" tab!

DCS-Setpoint %	The setpoint definition of the DCS is proportional to the desired flow rate in accordance with one of the two fixed valve curves for slow or fast opening.
DCS-Actual value %	The actual value signaled to the DCS either corresponds to the actuator position or the flow rate within the valve, depending on the parameterization.

Position

Setpoint value % OPEN	Setpoint definition for the travel position in % OPEN.
Actual value % OPEN	Current position value in % OPEN.

Current control by	
• remote	Current control mode of the actuator (remote / local).
• local	
Control	
• close	Operation command in CLOSE direction is present.
• open	Operation command in OPEN direction is present.
• no	No operation command is present.
Actual speed/ time rpm	Current speed (rpm) or positioning time (s) of the actuator.

Cut-off	
• totally …	Indication "**totally closed**“ or "**totally opened**“ for travel- or torque-dependent cut-off within the end position range.
• TL …	Indication **"TL CLOSE**“ or **"TL OPEN**“, if blocked in move.
• no	Indication "**no**“, if actuator is operated or stopped.
Intermediate contact …	"Intermediate contact CLOSE“ or "Intermediate contact OPEN“
• active	Indication whether the intermediate contact for OPEN or CLOSE parameterized for PROFITRON/HiMod has been exceeded. (Signal "inter.cont.CL/OP“). The indication is displayed for ECOTRON, if less than 2 % or more than 98 % of the travel have been covered.
• not active	Intermediate contact was not exceeded.
Failure behavior	
• not active	Connection to the DCS is ok.
• active - move to em.pos. • active - keep process act. value • active - move to fixed proc. setp.	"**active-…**“ is indicated once a fault at the control source has occurred, e.g. for open circuit behavior (see "**Security**“ tab under "**Error remote source".**
Process actual value %	Actual process value in %.
Motor temperature °C	Indicates the current motor temperature in °C.
Motor temperature warning	
• active	Indicates that the motor warning temperature has been exceeded
• not active	Indicated until the parameterized motor warning temperature has been reached. (see "**Security**“ tab "**Motor temperature warning at [°C]**“).
D.C. link voltage V	The supply voltage applied is first rectified and smoothed. The resulting voltage is the DC link voltage (≈supply voltage x 1.41 (1 phase) or x 1.35 (3 phase)).
Motor current A	Current DC voltage link current in A.
Electronic temperature °C	Indicates the current electronics temperature in °C.

Analog input

AI1 mA	Analog inputs for PROFITRON/HiMod (input current in mA) are displayed independent of their use. This helps during commissioning and troubleshooting (e.g. normalization of analog signals, disturbed signals, wiring check).
AI2 mA	

Binary input

CLOSE	Binary inputs (states “Low“/“High“) are displayed independent of their use. This helps during commissioning and troubleshooting (e.g. disturbed signals, wiring check).
OPEN	
STOP	
EMERG.	

Cyclic data update

Polling PC Polling BUS	After the download of the actuator parameters using “Read parameters” or “Read PROFIBUS”, the current parameters at the time of reading out are displayed. Use the “**Polling PC**” or “**Polling BUS**” buttons to request the data of the “C+M“ tab sheet cyclically from the actuator and to have them displayed as current values in “C+M“. The cyclic data update is signaled by “**POLLING**“ in the status bar: This function is of particular interest when diagnosing the actuator during remote operation. Click the respective button once again to stop the cyclic data update.

Operate PC

A cyclic data update is signaled by “**POLLING**“ in the status bar:

Close Open Stop Local / Remote	It is possible to control the actuator via the displayed buttons when the actuator is set to local mode. The four buttons “**Close**“, “**Open**“, “**Stop**“ and “**Local/Remote**“ correspond to the push buttons on the local control unit of the actuator.
Em	Click the “**Em**“ button to approach the emergency position; this corresponds to pressing the "Open“ and "Close“ push buttons at the local control unit at once.

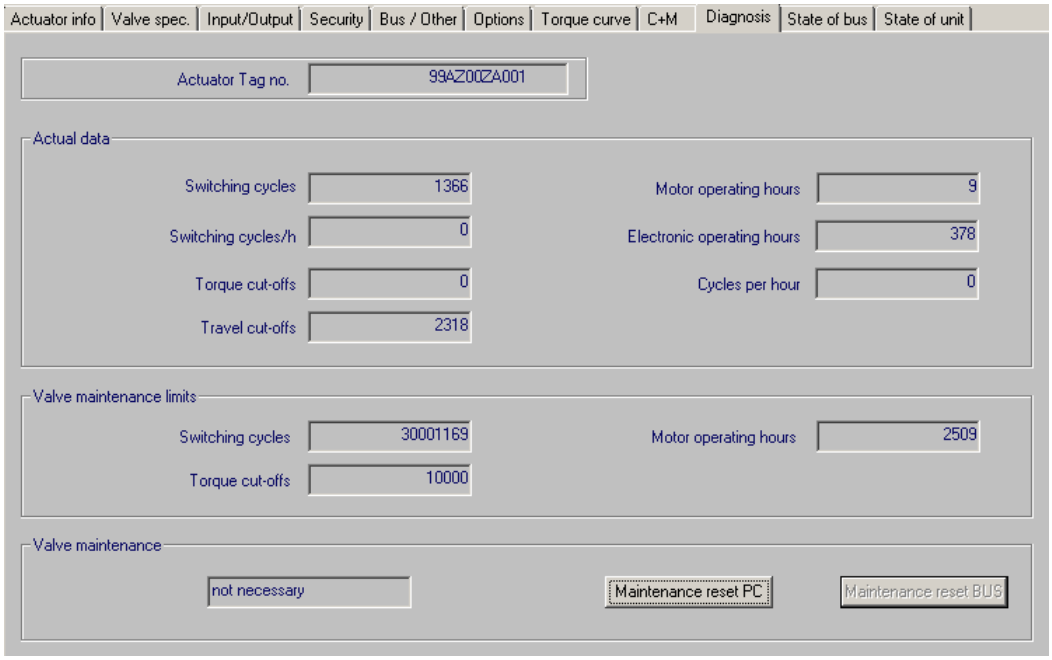
Operate Bus (Polling Bus)

The actuator can only be operated **with** cyclic data update "**Polling BUS**“!
The cyclic data update is signaled by “POLLING“ in the status bar:

Close Open Stop	In remote operation, the actuator can be controlled via the displayed buttons. The three "**Close**“, **"Open**“ and "**Stop**“ buttons correspond to the push buttons on the local control unit of the actuator.
Em	Click the “**Em**“ button to approach the emergency position.
Setpoint	Setpoint definition for the travel position in % OPEN. The entered setpoint must be activated via the "Send setpoint“ button to execute the operation command.
Send setpoint	Click to perform operation command according to setpoint definition.

7.9 Diagnosis

All diagnostic data is displayed.



Actual data

This data is collected and permanently stored in the RAM. Every 24 hours the data is written to the internal EEPROM for backup purposes; all data is safe, even in case of power failure.

Switching cycles	Total number of switching cycles since first start-up
Switching cycles/h	Average number of switching cycles/hour calculated from the last 10 minutes
Torque cut-offs	Total number of torque-dependent cut-offs since first start-up
Travel cut-offs	Total number of travel-dependent cut-offs since first start-up
Motor operation hours	Total number of motor operating hours since first start-up
Electronics operation hours	Total number of electronics unit operating hours since first start-up
Cycles per hour	Relative operational time during the last 10 minutes

Valve maintenance limits

Switching cycles **Torque cut-offs** **Motor operation hours**	When reaching one of the 3 maintenance interval limits, the **Valve maintenance** "**necessary**" signal is generated: - Number of switching cycles reached - Number of torque dependent cut-offs reached - Number of motor operation hours reached

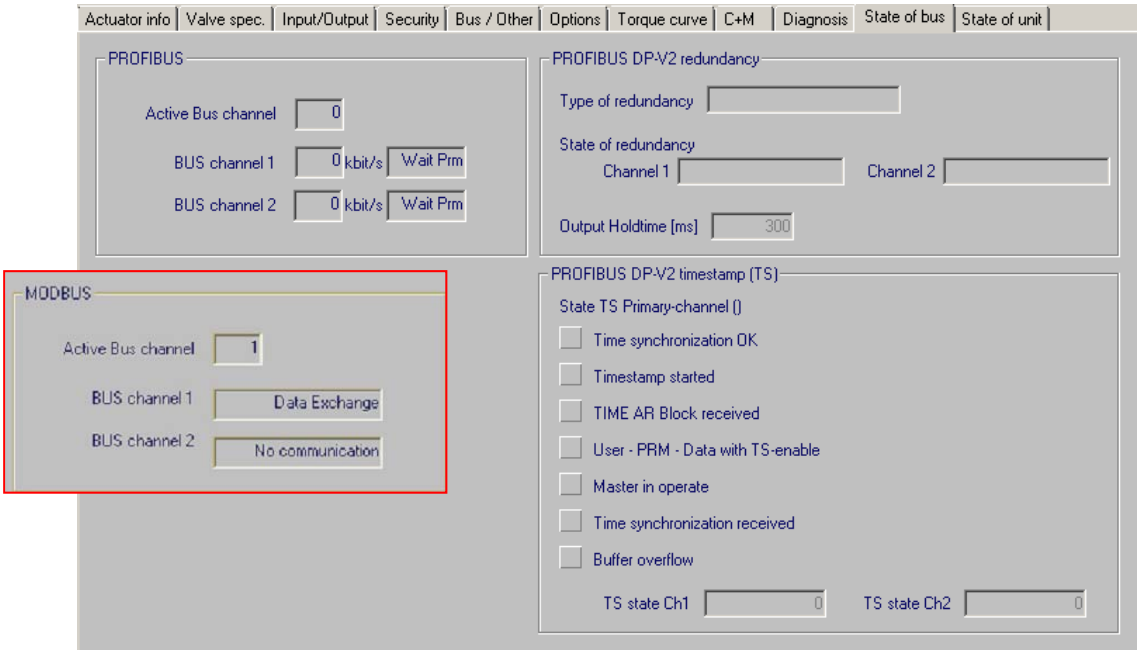
Valve maintenance

• not necessary • necessary	Indicates whether a maintenance limit has been exceeded or not. The maintenance limits have nothing to do with maintenance for the actuator and are only intended for maintenance planning of the valve!
Maintenance reset PC Maintenance reset BUS	Performed maintenance must be confirmed. Normally this is performed by clicking the "**Maintenance reset PC**" button. When connected via the PROFIBUS Master Simulator, confirm with "**Maintenance reset BUS**". After a maintenance reset, the threshold value "Valve maintenance limits" for a new maintenance signal is increased by adding the current value "Actual data" to the previously set "Value maintenance periods". The "Value maintenance periods". can be defined on the "**Security**" tab sheet (see chapter 7.4).

7.10 State of bus

Cyclic data update "**Polling PC**" must be activated!
The cyclic data update is signaled by "POLLING" in the status bar:

The bus status is monitored during bus operation and indicates the cyclically updated bus communication status.



For detailed descriptions on the indicated values, see operation instructions for PROFIBUS (order no. Y070.023/GB) or Modbus (order no. Y070.022/GB).

Depending on the fieldbus system, the status of the PROFIBUS or Modbus communication is indicated.

PROFIBUS

Active BUS channel	Indicates the active channel during data exchange; otherwise 0.
BUS channel … kbit/s	For each channel, "BUS channel 1“ and "BUS channel 2“, the transmission rate in kbit/s and the status of the respective channel is displayed:
• Wait Prm	Waiting for parameterization telegram.
• Wait Cfg	Waiting for configuration telegram.
• Data Exchange	Cyclic data exchange with PROFIBUS-Master.
• Fail Safe	Safety telegrams from the master. The actuator remains in the “Data Exchange” state and reacts according to its parameterization.
• GC-Clear	(Global-Control-Clear): Status message by the master. Actuator behavior identical to "Fail Safe“.

MODBUS

Active BUS channel	Indicates the active channel during data exchange; otherwise 0.
BUS channel …	For each channel, "BUS channel 1“ and "BUS channel 2“, the status of the respective channel is displayed:
• No communication	No communication established.
• Baud rate OK	Set communication parameters are OK.
• Data Exchange	Cyclic data exchange with Modbus-Master.

PROFIBUS DP-V2 redundancy

Redundancy in accordance with PNO 2.212 (PROFITRON/HiMod only).

Type of redundancy	The following redundancy types are supported:
• SIPOS redundancy	The actuator decides which channel is active (primary).
• PNO redundancy	The master decides which channel is active (primary). Within the PNO redundancy, the following distinction is made: - Flying redundancy (no cable redundancy etc.) - System redundancy (cable redundancy is possible and the master can also communicate with the passive channel (backup) etc.) After switching on, the actuator is always in the SIPOS redundancy mode.
State of redundancy channel …	The states for ”Channel 1“ and ”Channel 2“ are only indicated for PNO redundancy: - PTB stands for **P**rimary **t**o **B**ackup switchover - BTP stands for **B**ackup **t**o **P**rimary switchover
• POWER_ON	Initializing
• S_WAITING	Channel is offline and not ready for communication
• S_PRIMARY	Channel is online and ready for communication
• C_CONFIGURE	MS2 connection active
• BACKUP	Channel is backup
• BTP_PARTNER_ACK	Start channel switchover (offline for address change)
• BTP_SWITCHOVER	Waiting for SwitchoverDone message
• BTP_PRM_CMD	Waiting for PrmCmd with primary request
• BTP_DX	Waiting for first DataExchange-Telegr. Master
• PRIMARY	Channel is primary
• PTB_PARTNER_ACK	Start channel switchover (channel is offline)
• PTB_SWITCHOVER	Waiting for SwitchoverDone message
• NIL	Transition state
Output Holdtime [ms]	Time for channel switchover (PNO redundancy only) During the channel switchover, the outputs are held for this time.

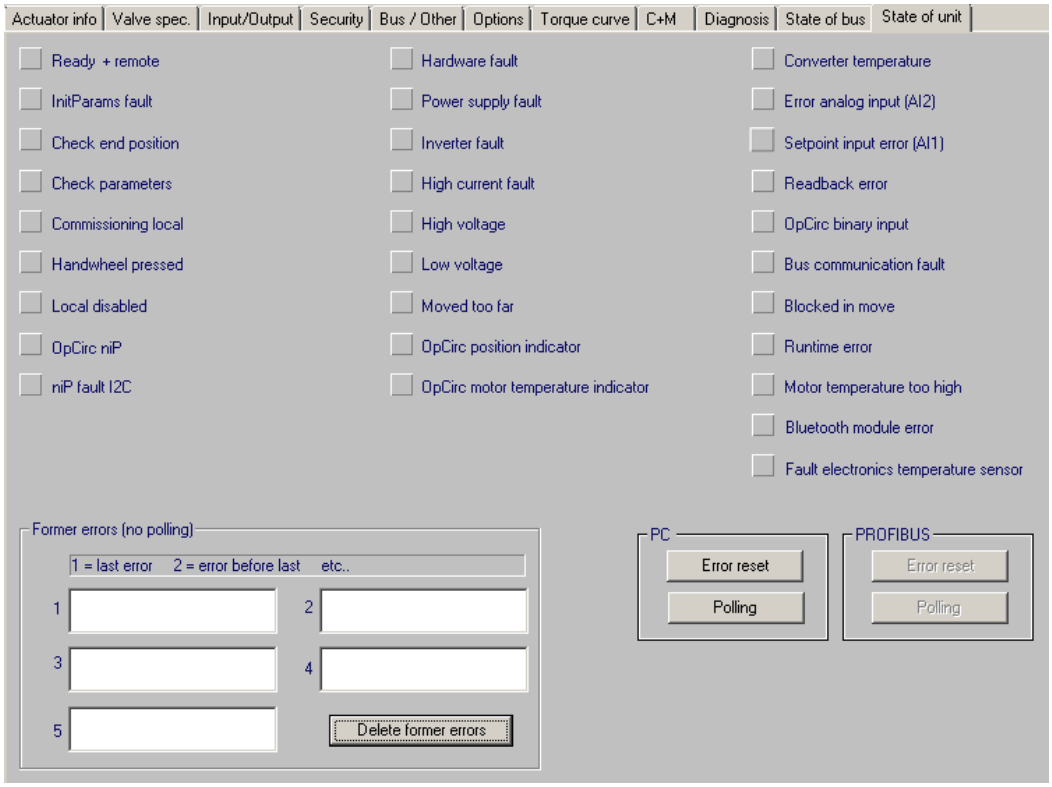
PROFIBUS DP-V2 timestamp [TS]

Timestamp in accordance with PNO 2.192 (PROFITRON/HiMod only).

State TS Primary channel [ ]
State of the timestamp for the active channel (primary) [channel 1] or [channel 2] is indicated in the following:

Time synchronization OK	Time synchronization received and timestamp started.
•	OK.
•	not OK
Timestamp started	Requirements for timestamp fulfilled, i.e. “Time AR Block received“, and "Master in operate“ have been received and "User - PRM - Data with TS-enable“ is activated.
•	started
•	not started
Time AR Block received	By means of the "Time AR" parameter block included in the SetPrm telegram, the master indicates the intervals for time synchronization.
•	received
•	not received
User - PRM - Data with TS-enable	By means of the "User_Prm_Data“ parameter block included in the SetPrm telegram, the master indicates whether the timestamp is activated.
•	activated
•	not activated
Master in operate	Master is in the "Operate" state and the actuator (slave) has received the "Global control operate" telegram.
•	received
•	not received
Time synchronization received	The time synchronization is transmitted in 2 steps: - Master sends TimeEvent and - Master sends ClockValue telegram stating the time when the TimeEvent telegram was sent.
•	Time synchronization received within the given time interval
•	Time interval not observed
Buffer overflow	Time stamped messages are buffered during a channel switchover since data exchange between master and slave is not possible during that time. Simultaneous messages (max. 17 messages) are written to a data record. Should more than 15 data records be written during switchover, this will be indicated in red. Only the first 15 data records are transmitted.
•	Buffer overflow
•	No buffer overflow
TS state Ch…	Internal information only! Indicates states/faults for ”TS state Ch1“ and ”state Ch 2“in the firmware.

7.11 State of unit



Status indication

Ready + Remote	
•	The actuator is ready for operation can be operated from ”Remote“. However, the ”Blocked in move“ fault may have occurred!
•	The indication is without color signal, if - the actuator is not in REMOTE, but in local or local param, - one of the fault signals below is present.

Fault signals

(without color signal): There is no fault present.

(red): An **error** is present.
➔ action required to solve problems (see below)

InitParams fault	The factory programming of the actuator is missing or the EEPROM is defective. ➔ Replace electronics or ➔ Contact SIPOS service (service@sipos.de)!
Check end position	The indication may have the following reasons: - End position adjustment has not yet been performed, - End position was passed due to hand wheel operation, - Friction coupling of the signaling gear was twisted or the signal gear ratio was changed or - Cut-off type was changed (e.g. from torque-dependent to travel-dependent) ➔ Perform end position adjustment once again!

Check parameters	The indication may have the following reasons: - No complete commissioning or - Fault while saving commissioning data caused by main-power fault. ➔ Check settings and change, if required!
Commissioning local	Commissioning via local control unit is active. In this case, no remote parameterization is possible. ➔ Wait for termination of local commissioning!
Handwheel pressed	Indication is displayed if: - Hand wheel/ crank is pressed or - Cable to the hand wheel is defective. ➔ Pull hand wheel and/or check cables/ contacts in the plug/ socket connector (refer to the following PIN configuration drawing)!
Local disabled	Status signal only! Local control can be disabled via field bus. In case of a BUS communication error, local control is automatically re-enabled.
OpCirc niP	No data is received by the non-intrusive position encoder (niP). ➔ Check cables and contact points electronics/gear and ➔ Check cables for separate installation!
niP fault I2C	No I2C communication to the position encoder (niP). ➔ Voltage OFF-ON (AC and DC), otherwise ➔ Replace electronics or ➔ Contact SIPOS service (service@sipos.de)!
Hardware fault	Malfunction of component(s) on the controller PCB ➔ Voltage OFF-ON (AC and DC), otherwise ➔ Replace electronics or ➔ Contact SIPOS service (service@sipos.de)!
Power supply fault	Mains failure/too low. ➔ Check power supply!
Inverter fault	Faulty or no communication to the inverter. ➔ Examine power supply, otherwise ➔ Contact SIPOS service (service@sipos.de)!
High current fault	Frequency converter has detected excessive current. ➔ Check motor cable for short-circuit and ➔ Check service conditions, e.g. ambient temperature, otherwise ➔ Replace electronics or ➔ Contact SIPOS service (service@sipos.de)!
High voltage	Mains voltage outside the tolerance +15% ➔ Check connection voltage and ➔ Check mains voltage for variations!
Low voltage	Mains voltage outside the tolerance -10% ➔ Check connection voltage and ➔ Check mains voltage for variations!
Moved too far	Position of the central wheel is too near to the mechanical end stop of the signaling gear: - The end positions have been exceeded by hand wheel operation or - the friction coupling in the signaling gear was twisted or the signaling gear ratio was changed. ➔ Recommissioning of limit positions is necessary!

OpCirc position indicator	Cable to potentiometer or magnetic travel sensor interrupted. ➔ Check cables and contact points electronics/gear (refer to the following PIN configuration drawing) and ➔ Check cables for separate installation**!**
OpCirc motor temperature indicator	Connection to the temperature indicator (PTC thermistor) interrupted. ➔ Check cables/pins within the round plug(see PIN configuration overview below)!
Converter temperature	Temperature in the frequency converter too high. Sluggishness of the MOV or an excessive number of starts or excessive ambient temperature might be a possible reason. ☞ For firmware version 2.29 and higher, this is no longer applicable! ➔ Check ambient temperature and control mode/duty cycles, etc. and ➔ Perform firmware update for repeated indication!
Error analog input (AI2)	This message is only possible for (4-20mA) live-zero setting. Threshold I: > 21 mA or < 3.6 mA ➔ Check input current!
Setpoint input error (AI1)	This message is only possible for (4-20mA) live-zero setting. Threshold I: > 21 mA or < 3.6 mA ➔ Check input current!
Readback error	Fault at 0/4 – 20 mA output. ➔ Replace electronics or ➔ Contact SIPOS service (service@sipos.de)!
OpCirc binary input	Error when checking the binary inputs (OPEN, CLOSE, STOP, EMERGENCY): The binary inputs have been parameterized as “NC inputs” and a low voltage level (0V) is present at all binary inputs. ➔ Check parameterization of binary inputs and voltage at binary inputs!
Bus communication fault	In fieldbus communication, an interruption has occurred (timeout). This error status is only signaled as a fault, if the remote control is performed via fieldbus. ☞ The bus address must deviate from the default setting (126 for PROFIBUS and 247 for Modbus)! ➔ Check bus communication and connection!
Blocked in move	A blockage of has been detected in the travel. The actually required torque exceeds the tripping torque, or ”Separate mount.“ parameter is set to ”>10m with filter“ although there is no LC-filter available. ☞ The actuator can still be moved electrically in the opposite direction! ➔ Check valve and torque setting, increase tripping torque if necessary or use the”Move again, if blocked in move“ function and ➔ Check MOV for sluggishness and ➔ Check ”Separate mounting“ parameter!

Runtime error	After 3 % of the commissioning time, the actuator has cover less than 0.5 % travel. The positioning time is measured and saved for the set output speed for end position adjustment. Possible reasons: - Fault in position recording (the gear backlash between potentiometer and central wheel is too small or too large: no change of position is detected although the motor is running), - Signaling gear ratio was changed: - Signaling gear turns in the opposite direction or - setting of the slidewheel (revs/stroke) in the signaling gear is to high), - Actuator is blocked (actuator cannot be operated from position/end position), - Parameter for separate mounting ”>10m with filter“ not set, - Potentiometer contacts in the plug/ socket connector were ejected (refer to the following PIN configuration drawing), - Incorrect assembly and/or setting of the potentiometer after an exchange, - Faulty potentiometer (film is interrupted), - Motor cable interrupted (motor is not running). ➔ Check valve, signaling gear, motor and potentiometer and ➔ Check ”Separate mounting“ parameter!
Motor temperature too high	The motor has exceeded the maximum temperature of 155 °C. Possible reasons, e.g.: - Excessive ambient temperature, - Excessive run time (e.g. S2/ 15 min. has been exceeded), - Too many switching cycles (e.g. 1,200 switching cycles have been exceeded), - Actually required torque too high, - Short- circuited motor coil or connection to the motor temperature sensor interrupted (2SG5 only), - Parameter for separate mounting ”>10m with filter“ not set. ☞ The motor temperature monitoring can be deactivated by programming at the actuator (PROFITRON/HiMod only) (plant protection has priority over motor protection). However, the warranty for the actuator immediately becomes void! ➔ Check service conditions, valve and motor and ➔ Check ”Separate mounting“ parameter!
Bluetooth module error	A communication error is detected within the Bluetooth module. The actuator still is ready for operation and can be programmed using the local control station or COM-SIPOS via the null modem cable. ➔ Voltage OFF-ON (AC and DC), otherwise ➔ Replace electronics or ➔ Contact SIPOS service (service@sipos.de)!
Fault electronics temperature-sensor	Electronics temperature cannot be determined. Value of the electronics temperature is set to 0 °C. The actuator can still be operated. ➔ Voltage OFF-ON (AC and DC), otherwise ➔ Replace electronics or ➔ Contact SIPOS service (service@sipos.de)!

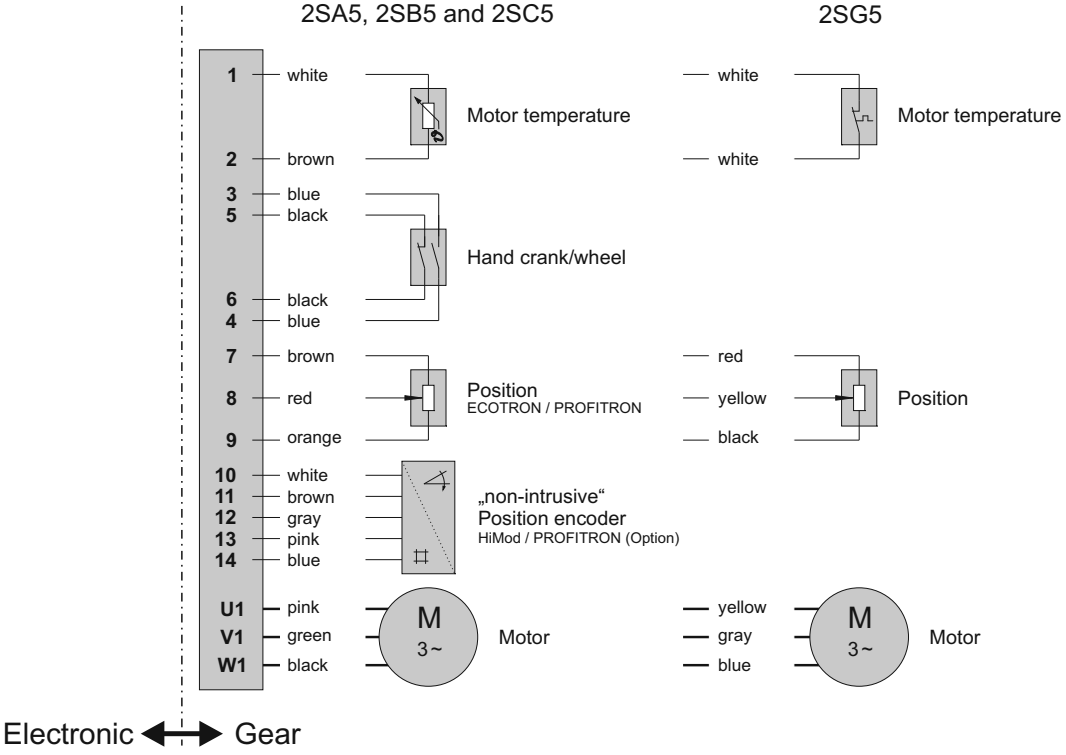
Former errors (no Polling)

Former errors	1 = last error 2 = error before last etc.
• 1 • 2 • 3 • 4 • 5	The last 5 errors are stored in the actuator (from firmware version 2.14 on).
Delete former errors	After successful reset of the current error, the error log can be deleted by clicking the "Delete former errors“ button.

PC and PROFIBUS

Error reset	If an error is present, click this button to reset the error. Only errors which can be acknowledged, such as "Runtime error" are deleted. If there are no other faults, the actuator returns to the "Ready + Remote" signal, indicated by the green color.
Polling	After the download of the actuator parameters using “Read parameters” or “Read PROFIBUS”, the current status of the unit at the time the parameters are read out is indicated. Use the "**Polling**” button to cyclically request parameters from the actuator and to indicate the current status of the unit. The cyclic data update is signaled by “**POLLING**“ in the status bar: This function is of particular interest when diagnosing the actuator during remote operation. Click the respective button once again to stop the cyclic data update.

PIN configuration drawing – gear unit plug



8 Checking the interface to DCS

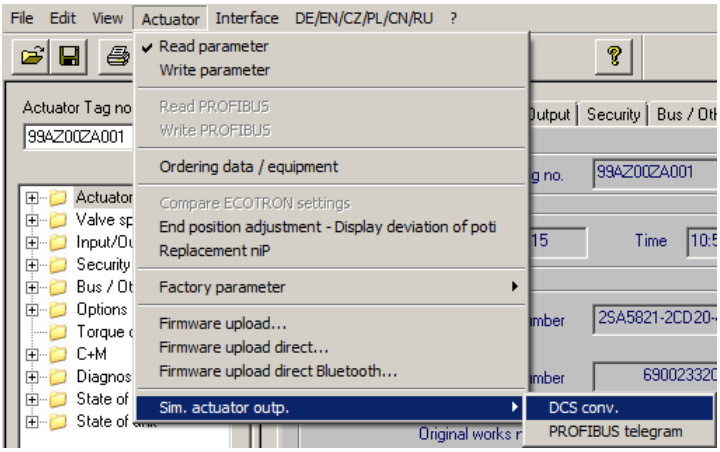
The interface to the DCS can be checked by simulating the actuator outputs.

Use the “**Sim. actuator outp**.“ command in the **"Actuator"** menu to select “DCS conv.“, where you can check the connection to the DCS by means of simulated binary and analog output signals. Select “PROFIBUS telegram“ to check the evaluation of telegrams within the DCS by means of freely programmable, simulated PROFIBUS telegrams.

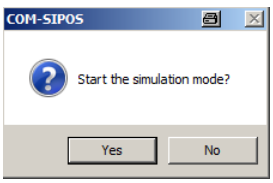
- ”**DCS conv. “**
  In the “DCS conv.“ simulation mode, the binary outputs can be set independent of the actuator status and therefore the connection between actuator and DCS can be checked.
  This function is very useful for checking the communication interface, even if the actuator has not been commissioned yet and no mains voltage is connected. E.g. it is possible to test the signal “actuator in end position CLOSE“ without effectively moving the valve to the CLOSE end position.
- ”**PROFIBUS telegram**“
  In the “PROFIBUS telegram“ simulation mode, the output data of the actuator telegram can be set independent of the actuator status.
  Thereby, you can check the evaluation of the telegram in the DCS.

- The correct transmission of binary and analog control system output signals to the actuator can be checked in the “C+M” tab sheet and the fieldbus status of the actuator can be checked on the “State of bus” tab sheet (see chapter 7.8 or. 7.10).
- The simulation mode is supported by firmware version 2.35 and above.

8.1 Start simulation



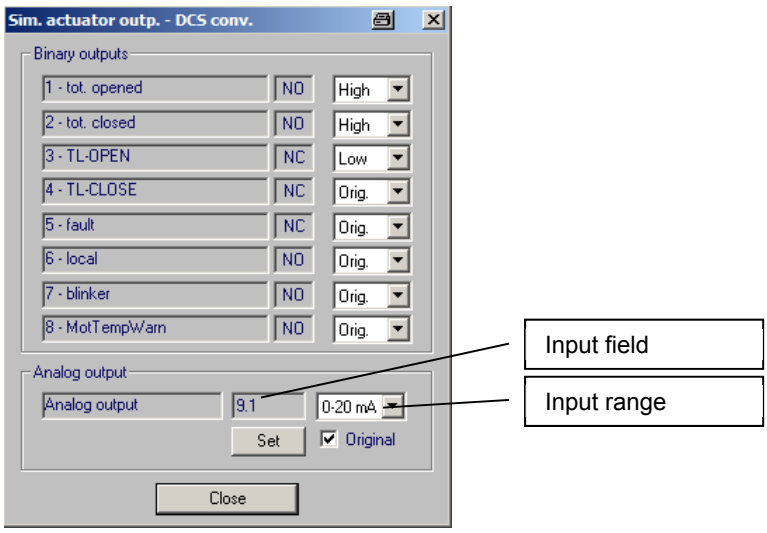
Start of the simulation mode must be confirmed:



- In the simulation mode, there is a cyclic data exchange between COM-SIPOS and the actuator. If the actuator does not receive a telegram from COM-SIPOS in the simulation mode for 10 seconds, the actuator quits the simulation mode and performs a RESET!
- Status information is changed within the simulation mode; after quitting the simulation mode, the actuator therefore performs a RESET!

8.2 Simulation mode for conventional DCS

After starting the “DCS conv.“ simulation mode, the following dialog box appears.



Binary outputs

Changes performed on the binary signal outputs in the "Input/Output“ tab will be accepted if the "Hold setting“ function was activated!

The following values can be set for the binary actuator outputs:

• Orig.	The output is set according to the parameterization.
• High	The output is set to active (24V).
• Low	The output is set to not active (0V).

Analog output

The analog actuator output can be set as follows:

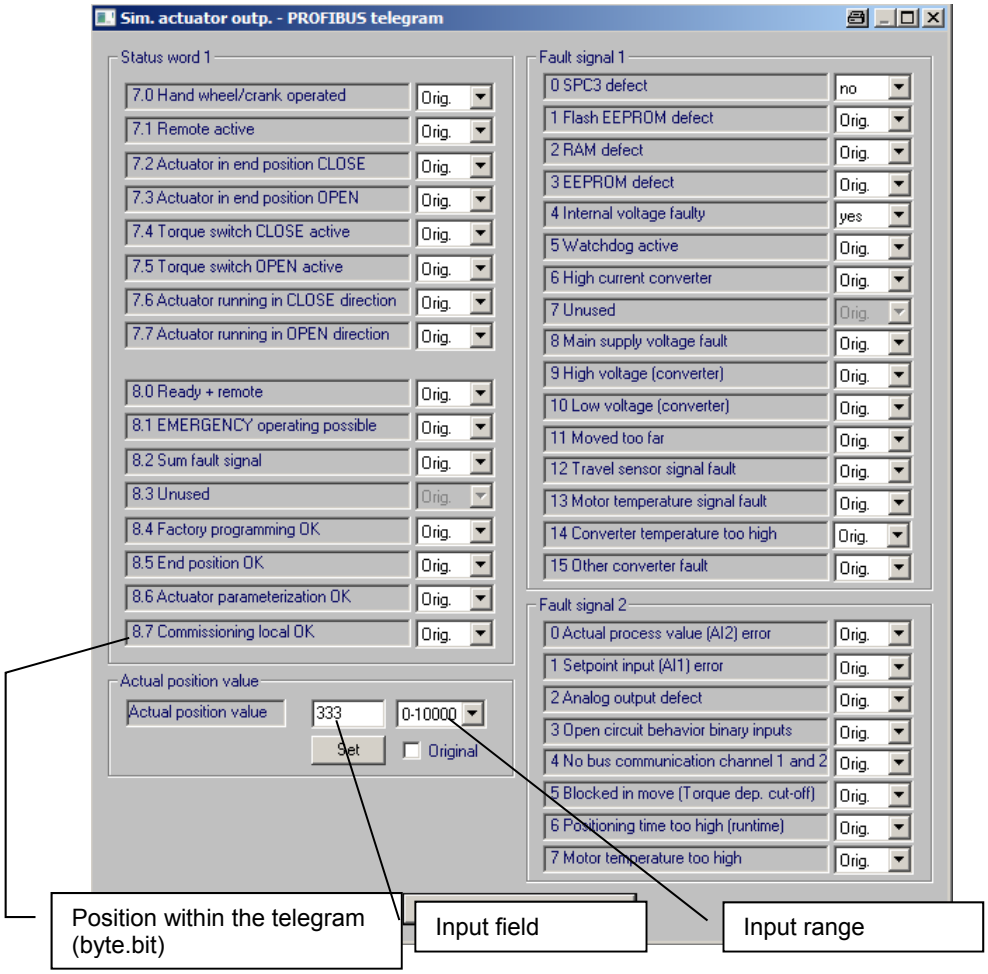
Input field	Value to be displayed.
Input range • 0-100 % • 0-10000 • 0-20 mA	You may choose between the units ”0-100 %“, ”0-10000“ or ”0-20 mA“.
Original	
• ☑	Current actual position or actual process value is displayed.
• ☐	Value of the input field is displayed (e.g. 9.1 mA).
Set	The analog output is set according to the value of input field and input range.

Close	Click this button to quit the simulation mode.

8 Checking the interface to DCS

8.3 Simulation mode for PROFIBUS

After starting the “PROFIBUS telegram“ simulation mode, the following dialog box appears.


Sim. actuator outp. - PROFIBUS telegram
Status word 1
7.0 Hand wheel/crank operated
7.1 Remote active
7.2 Actuator in end position CLOSE
7.3 Actuator in end position OPEN
7.4 Torque switch CLOSE active
7.5 Torque switch OPEN active
7.6 Actuator running in CLOSE direction
7.7 Actuator running in OPEN direction
8.0 Ready + remote
8.1 EMERGENCY operating possible
8.2 Sum fault signal
8.3 Unused
8.4 Factory programming OK
8.5 End position OK
8.6 Actuator parameterization OK
8.7 Commissioning local OK
Actual position value
Actual position value
333
0-10000
Set
Original
Fault signal 1
0 SPC3 defect
1 Flash EEPROM defect
2 RAM defect
3 EEPROM defect
4 Internal voltage faulty
5 Watchdog active
6 High current converter
7 Unused
8 Main supply voltage fault
9 High voltage (converter)
10 Low voltage (converter)
11 Moved too far
12 Travel sensor signal fault
13 Motor temperature signal fault
14 Converter temperature too high
15 Other converter fault
Fault signal 2
0 Actual process value (AI2) error
1 Setpoint input (AI1) error
2 Analog output defect
3 Open circuit behavior binary inputs
4 No bus communication channel 1 and 2
5 Blocked in move (Torque dep. cut-off)
6 Positioning time too high (runtime)
7 Motor temperature too high
Position within the telegram (byte.bit)
Input field
Input range

In the PPO1 and PPO2 telegram, individual bits/ bytes can be changed.

Status word 1 / Fault signal 1 and **Fault signal 2**

• Orig.	The bit is set by the firmware of the actuator according to the status.
• yes	The bit is definitely set to 1.
• no	The bit is definitely set to 0.

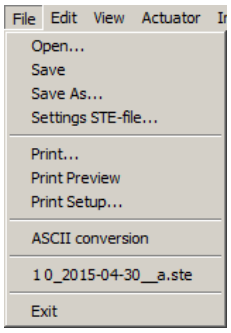
Actual position value (byte 9 and 10)

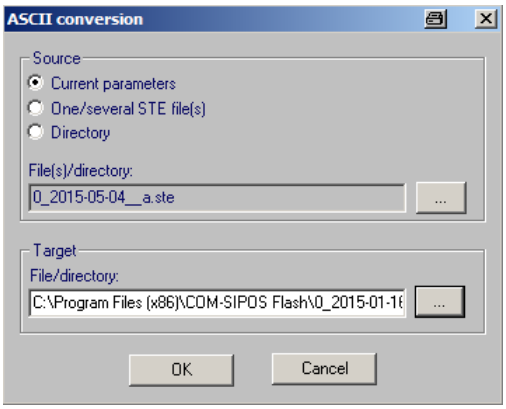
Input field	Value to be displayed.
Input range	You may choose between the units ”0-100 %“, ”0-10000“ or ”0-20 mA“.
• 0-100 %	
• 0-10000	
• 0-20 mA	
Original	
• ☑	Current actual position value is displayed.
• ☐	Value of the input field is displayed (e.g. 333).
Set	The actual position value is set according to the value of input field and input range.

Close	Click this button to quit the simulation mode.

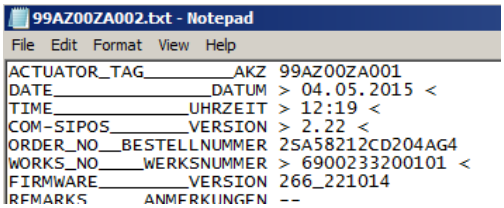
9 Convert *.ste into *.txt

The “**ASCII-Conversion**“ command in the **File** menu allows to convert the parameter data (customer and factory parameters as well as current values) saved as binary file (*.ste), into a text file (*.txt).





Source

◉ **Current parameters**	Saves the actuator parameters of the actuator currently communicating with COM-SIPOS as text file in txt format.  ☞ The file name (with the extension .txt) can be freely selected!
◉ **One/several STE-file(s)**	Converts one or more selected .STE-file(s) into a defined directory in txt format. ☞ The file name cannot be changed (name.ste ➔ name.txt)!
◉ **Directory**	Converts all *.STE-files in a selected directory into a defined directory in txt format. ☞ The file name cannot be changed (name.ste ➔ name.txt)!
File(s)/directory:	Selection of the directory and mark up of the “.ste” file(s) to be converted.

Target

File/directory	Definition of the directory into which the converted “.txt” file(s) is/ are to be saved.

Presenting text files in a table

All parameters can be presented in an Excel spreadsheet to give a clear overview of the data of all SIPOS actuators in a plant.

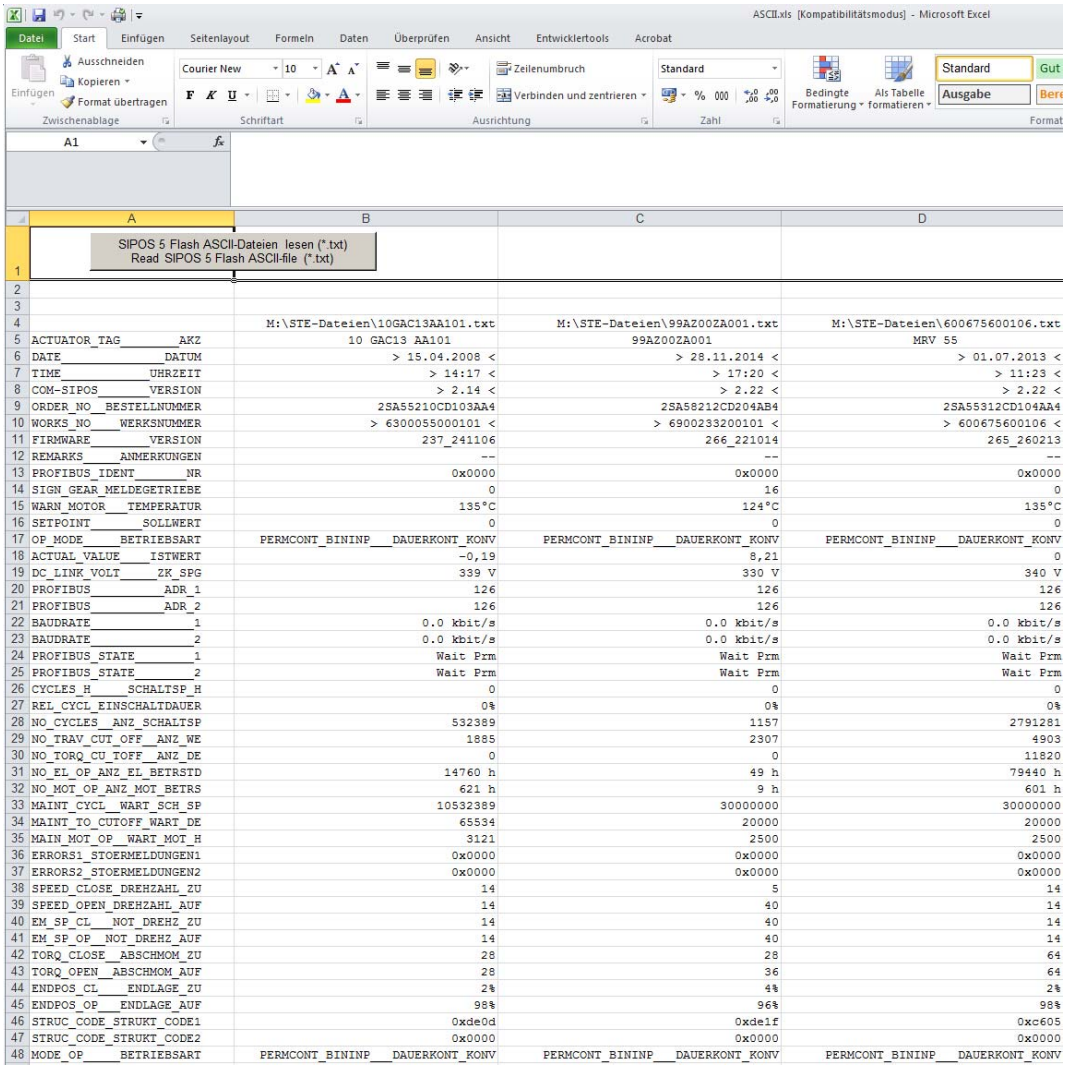
To this end, proceed as follows:

- Convert COM-SIPOS binary files (.ste files) as described above into text files (.txt files).
- Start "**ASCII-files-Dateien (MS-Excel)**" Excel table sheet (file) under Start ➔ All Programs ➔ COM-SIPOS-Flash using Microsoft Excel. This Excel table sheet has been specially designed for the presentation of several actuator parameter files.

☞ To be able to use this function, Excel has to allow for the execution of so called macros. Please note possible messages during start-up and acknowledge them. If required, the security level with regards to macros in Excel has to be set to a lower level (refer to Excel menu Tools ➔ Options ➔ Security ➔ Macro security…). After acknowledging or changing the security level for macros, the program has to be restarted!

- Click the "**READ SIPOS 5 Flash ASCII-file (*.txt)**" button with the left mouse-button to start the Excel macro.
- Select directory with the .txt files to be listed. Click the "OK" button to have all marked up .txt files presented in a table in xls format.

For each actuator, the data is shown in a separate column:


ASCII.xls [Kompatibilitätsmodus] - Microsoft Excel
SIPOS 5 Flash ASCII-Dateien lesen (*.txt)
Read SIPOS 5 Flash ASCII-file (*.txt)

	A	B	C	D
4		M:\STE-Dateien\10GAC13AA101.txt	M:\STE-Dateien\99AZ00ZA001.txt	M:\STE-Dateien\600675600106.txt
5	ACTUATOR_TAG_____AKZ	10 GAC13 AA101	99AZ00ZA001	MRV 55
6	DATE_____DATUM	> 15.04.2008 <	> 28.11.2014 <	> 01.07.2013 <
7	TIME_____UHRZEIT	> 14:17 <	> 17:20 <	> 11:23 <
8	COM-SIPOS_____VERSION	> 2.14 <	> 2.22 <	> 2.22 <
9	ORDER_NO__BESTELLNUMMER	2SA55210CD103AA4	2SA58212CD204AB4	2SA55312CD104AA4
10	WORKS_NO____WERKSNUMMER	> 6300055000101 <	> 6900233200101 <	> 600675600106 <
11	FIRMWARE_____VERSION	237_241106	266_221014	265_260213
12	REMARKS_____ANMERKUNGEN	--	--	--
13	PROFIBUS_IDENT_____NR	0x0000	0x0000	0x0000
14	SIGN_GEAR_MELDEGETRIEBE	0	16	0
15	WARN_MOTOR___TEMPERATUR	135°C	124°C	135°C
16	SETPOINT_____SOLLWERT	0	0	0
17	OP_MODE_____BETRIEBSART	PERMCONT_BININP___DAUERKONT_KONV	PERMCONT_BININP___DAUERKONT_KONV	PERMCONT_BININP___DAUERKONT_KONV
18	ACTUAL_VALUE____ISTWERT	-0,19	8,21	0
19	DC_LINK_VOLT_____ZK_SPG	339 V	330 V	340 V
20	PROFIBUS_____ADR_1	126	126	126
21	PROFIBUS_____ADR_2	126	126	126
22	BAUDRATE_____1	0.0 kbit/s	0.0 kbit/s	0.0 kbit/s
23	BAUDRATE_____2	0.0 kbit/s	0.0 kbit/s	0.0 kbit/s
24	PROFIBUS_STATE_____1	Wait Prm	Wait Prm	Wait Prm
25	PROFIBUS_STATE_____2	Wait Prm	Wait Prm	Wait Prm
26	CYCLES_H_____SCHALTSP_H	0	0	0
27	REL_CYCL_EINSCHALTDAUER	0%	0%	0%
28	NO_CYCLES__ANZ_SCHALTSP	532389	1157	2791281
29	NO_TRAV_CUT_OFF__ANZ_WE	1885	2307	4903
30	NO_TORQ_CU_TOFF__ANZ_DE	0	0	11820
31	NO_EL_OP_ANZ_EL_BETRSTD	14760 h	49 h	79440 h
32	NO_MOT_OP_ANZ_MOT_BETRS	621 h	9 h	601 h
33	MAINT_CYCL__WART_SCH_SP	10532389	30000000	30000000
34	MAINT_TO_CUTOFF_WART_DE	65534	20000	20000
35	MAIN_MOT_OP__WART_MOT_H	3121	2500	2500
36	ERRORS1_STOERMELDUNGEN1	0x0000	0x0000	0x0000
37	ERRORS2_STOERMELDUNGEN2	0x0000	0x0000	0x0000
38	SPEED_CLOSE_DREHZAHL_ZU	14	5	14
39	SPEED_OPEN_DREHZAHL_AUF	14	40	14
40	EM_SP_CL___NOT_DREHZ_ZU	14	40	14
41	EM_SP_OP__NOT_DREHZ_AUF	14	40	14
42	TORQ_CLOSE__ABSCHMOM_ZU	28	28	64
43	TORQ_OPEN__ABSCHMOM_AUF	28	36	64
44	ENDPOS_CL____ENDLAGE_ZU	2%	4%	2%
45	ENDPOS_OP___ENDLAGE_AUF	98%	96%	98%
46	STRUC_CODE_STRUKT_CODE1	0xde0d	0xde1f	0xc605
47	STRUC_CODE_STRUKT_CODE2	0x0000	0x0000	0x0000
48	MODE_OP_____BETRIEBSART	PERMCONT_BININP___DAUERKONT_KONV	PERMCONT_BININP___DAUERKONT_KONV	PERMCONT_BININP___DAUERKONT_KONV

10 Example: Printout of actuator state

SIPOS Aktorik GmbH

Plant documentation SIPOS 5 actuator Date 11.04.2007

Project:

Actuator info

Actuator Tag no.	*MOV 483*		
Order number	*2SA5521-2CD10-4DB4*	Firmware version	*2.38 09.03.07*
Works number	*1234567890123*	Type	*modulating*
Original works number	*1234567890123*	Motor warranty	*valid*
Adjustment signaling gear [rev./stroke]	*36*		
Remark	*--*		
Position controller	*enabled*	Process controller	*not enabled*
Travel dependent output speed	*not enabled*	External analog output speed setpoint	*not enabled*
Travel- dep. adjustable pos. times	*not enabled*	Proportional / split-range functionality	*not enabled*

Valve spec.

CLOSE direction	*clockwise*	Emergency position [%]	*0*
Closing speed [rpm]	*14*	Opening speed [rpm]	*14*
Emergency speed CLOSE [rpm]	*14*	Emergency speed OPEN [rpm]	*14*
Torque CLOSE [Nm]	*30*	Torque OPEN [Nm]	*30*
Endposition range CLOSE [%]	*0 – 2*	Endposition range OPEN [%]	*98 – 100*
Cut off mode CLOSE	*torque-dependent*	Cut-off mode OPEN	*travel-dependent*

Input/Output

Binary inputs [OPEN,CLOSE,STOP]	*NO*	Emergency input	*NO*
Remote control	*PermCont BinInp*	Remote reconnect	*non-active*
Intermediate contact CLOSE [%]	*0 – 2*	Intermediate contact OPEN [%]	*100 – 100*
Actual value output	*actual position value* *4 mA – 20 mA* *rising slope*		
Setpoint input [AI1]	*4 mA – 20 mA* *rising slope*	Analog input 2 [AI2]	*4 mA – 20 mA* *rising slope*
Binary output 1	*tot. opened / NO*	Binary output 5	*fault / NC*
Binary output 2	*tot. closed / NO*	Binary output 6	*local / NO*
Binary output 3	*TL-OPEN / NC*	Binary output 7	*blinker / NO*
Binary output 4	*TL-CLOSE / NC*	Binary output 8	*MotTempWarn / NC*

Security

Motor temperature warning [°C]	*135*	Motor temperature protection	*on*
Motor heating	*off*	Open circuit behavior	*keep position*
Close tightly	*yes*	Move again, if blocked in move	*0*
Valve maintenance periods			
Switching cycles	*100000*	Torque cut-offs	*10000*
Motor operation hours	*2500*		

Bus / Other

Language LCD	*English*		
DC brake [%]	*0*	Rise time [s]	*0.5*
Customer variant	*0*	Delay time fault signal power supply [s]	*6.0*
Position controller dead band min. [%]	*0.2*	Position controller dead band max. [%]	*2.5*

The following data is only displayed if the respective fieldbus interface is available!

MODBUS

Address Channel 1	*247*	Address Channel 2	*247*
Baud rate Channel 1 [bit/s]	*19200*	Baud rate Channel 2 [bit/s]	*19200*
Parity Channel 1	*even, 1 stop bit*	Parity Channel 2	*even, 1 stop bit*
Moni:time Channel 1[s]	*3*	Moni:time Channel 2[s]	*3*

PROFIBUS

Address Channel 1	*126*	Address Channel 2	*126*
PZD 3	*status word 2*	PZD 5	*fault signal 2*
PZD 4	*fault signal 1*	PZD 6	*actual duty*

Diagnosis

Actual data

Switching cycles	*25*	Switching cycles/h	*0*
Torque cut-offs	*4*	Travel cut-offs	*6*
Motor operating hours	*0*	Electronic operating hours	*216*
Cycles per hour	*0*		

State of unit

Ready + remote -

Former errors (1 = last error, 2 = error before last etc.)

1	*not valid*	4	*not valid*
2	*not valid*	5	*not valid*
3	*not valid*		

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